2015 Vape Pen Review LICLET IN ALE

Jorge's
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Guru Returns

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Curing Kids with Cannabis

Lockdown Nation America's Prison Crisis 100+
Pens
Tested!

Growroom Security Guide

July 2015

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OF CHAMPIONSHIP BREEDING!

10 YEARS YOUNGER: Reeferman (Charles Scott, left) and BCBD's Matt Harvey each placed first overall at the High Times Cannabis Cup in 2004, in Amsterdam. Charles took home the Sativa crown with Love Potion ||1 and Matt's winning Indica was BC God Bud.

REEFERMAN'S SEED HST

PRICES PER 10-SEED PACK

BC GOLD - \$100

BIG SUR HOLY WEED - \$100

BOHDI SATVA - \$100

CBD OG KUSH - \$125

CBD WILLIE - \$125

CHINA WHITE - \$100

EARLY BUBBA KUSH - \$100

EARLY PURPLE KUSH - \$100

FIRE OG KUSH - \$ 200 9

GOLDEN TEMPLE KUSH - \$100

GRAPEFRUIT - \$200 P

HARMONY - \$100 ()

HASH PLANT - \$ 100

HOA BAC SILVER FLOWER - \$200 ₽

KINGS CROSS - \$ 100 ()

KODIAC GOLD - \$100

LOVE POTION x NIGERIAN - \$100

LOVE POTION 1.1 - \$100 (

MALAWI WOWIE - \$200 \$

NIGERIAN NIGHTMARE - \$100

ORANGE PEAKO - \$ 100

PETROLIA HEADSTASH - \$100

PINK KUSH - \$100 ()

PURPLE CONGO KUSH - \$200 9

SOUR DIESEL - \$100

WAKEFORÐ 1.0 - \$200 ₽

WILLIE NELSON - \$ 100 (

In 2014 Charles (2nd from right) and Matt (center) were back in Amsterdam at the 27th Annual Cannabis Cup. BC Bud Depot won an award with Night Nurse, a joint project and hybrid of Reeferman's Harmony.



REEFERMAN AND BC BUD DEPOT ARE OPENING A DISPENSARY!

> MY NAME IS CHARLES SCOTT. I PERSONALLY GUARANTEE THE EXCELLENCE OF THE STRAINS I BREED.

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Revive — Guaranteed to rejuvenate your crops if they get into nutrient-deficiency trouble — which can happen if something unexpected and beyond your control occurs...or you're using inferior nutrients. Save plants in distress by adding it to your nutrient solution or using it as a foliar spray at the first sign of trouble. These rejuvenating substances flood the plant with healing nutrition. Use it at the first sign of trouble and your precious plants will get their best chance not only to survive, but thrivel







GROW MORE GLISTENING, STICKY, RESIN-GLAZED, TRICHOME-COVERED BUDS AND STURDIER, STRONGER STALKS AND BRANCHES!



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at a faster metabolic rate. Experience increased yield, quality, aroma, color
production faster than you could have imagined without using synthetic nut

Rhino Skin—Increases trichemes and parented alterior ray a polarithan vessel of straighter and support bulkier, heavier buds You'll get big. The ky polar branched value.

Paul Factor X — Triggree organic acquired templance (SAS) within plants to produce in amounts of essential oils and largenally, which directly benefit tasks aroma, and result progiving you higher-quality arous with greater market value.

B-52 — Amplifies overall plant matricipies. Estimates strong cost developmental matricipals of the end helps your crops light off stresses with a matricipal and seatther, ozone strong his and seatther.



THE MOST OVERLOOKED AREA FOR

GETTING POUNDS OF BUDS

Sensizym – Specifically formulated enzymes that scoup the root zone, removing debris and eradicating disease by "recycling" it into usable carbohydrates that fuel bud grey and boost yields. Growers report it also decompeded to zone debris so well, you can often reuse growing most such as rockwool and coco coir for another crop filesycle—saving, you maney!

Ancient Earth Organic — A rich combination of humic and fulvic acid that will help transform your growing medicine to a richer, healthier, more vibrant foundation for your crops while pumping up their roots. Also stabilize the pt and optimize nutrient delivery. Helps plants withstand disease, drought, and other environmental stresses.





HIGH TIMES JULY



By using lighting that minimizes or eliminates infrared and other wasted light, you can achieve the perfect leaf-surface temperature to produce maximum yields while running less power and minimizing the need for cooling.

-Leaf-Surface Temperature, page 89

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45 2015 Vapor Pen Review

With more than 100 different vape pens in hand, we enlisted the help of over two dozen judges to select the ones that deserved a place in our annual Buyer's Guide. Here are their findings for the Top 25 concentrate and Top Five flower vape pens. *By Jen Bernstein*

63 Growland Security

Learn the ins and outs of designing an undetectable growroom. A high level of security is no small investment, but these powerful measures can help you avert disaster. *By Sirius J*

72 The Cannabis Life Cycle

In this excerpt from his forthcoming book *The Cannabis Encyclopedia*, grow guru and former *High Times* columnist Jorge Cervantes details the life cycle of the marijuana plant, from seedling and the vegetative stage all the way through flowering and harvest.

89 Understanding Leaf-Surface Temperature

Learn all about the importance of temperature at the canopy level in order to optimize growing conditions for healthier plants and bigger harvests. By Mitch Shenassa

99 Our Children, Our Lives

How do you argue with a parent whose seriously ill child benefits from the use of cannabis? Essentially, you can't. Three sets of parents tell their stories of working with this miraculous medicine. *By Dan Skye*

109 The High Times Interview: Maya Schenwar

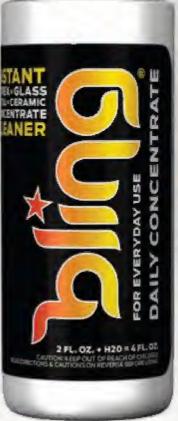
People get out of prison poorer and more alienated from society than they were prior to incarceration—and, tragically, over 40 percent will return to prison within three years. Maya Schenwar's new book, Locked Up, Locked Out: Why Prison Doesn't Work and How We Can Do Better, is a hard-hitting indictment of our penal system. Ey Dan Skye

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Glass Artist of the Month

Emily Marie (Instagram at @ emilymarieglass) discovered glass-blowing in 2008 when she took up an apprenticeship under top artist Kristian Merwin. After spending several months making jewelry and other ornaments, she made her first pipe—and never looked back.

Now she makes larger and more complex pieces and calls her esthetic "constantly evolving." Based in Salt Lake City, UT, she's uses her craft as a medium to combine her artistic desires with her love of science and the natural world.

Upon entering her first live glassblowing competition at CHAMPS, she took a gold medal in the qualifying round, moving on to take fourth place in the Masters' Final.

"Competitions," she says, "are the opportunity to challenge myself and to grow—and to feel the great adrenaline rush that comes with creating something at the edge of one's skill level!"

Emily knows that without the skill and generosity of her fellow artists and collectors, she and the rest of the glass world would surely stagnate. "I plan to spend the rest of my years exploring the medium," she vows, "pushing it to its limits and contributing something of value to its culture and its wealth of creative knowledge."

Check out Emily Marie's work at hightimes.com.



POT POLL

Getting Busted!

There have been approximately 15 million marijuana arrests in America since the Drug War got underway, and 88% have been for simple possession. We asked if you were one of the unlucky ones. Though we acknowledge, considering who our audience is, that results were a bit skewed, we were stunned when 70 percent of respondents reported being busted. This American travesty—and tragedy—must end now!

Cast your vote in our latest poll online!



Yes

70%

No

30%

Calling All High Artists!

We all know that marijuana enhances your creativityand we've got the correspondence to prove it! Every week High Times receives dozens of submissions of stoner creativity-drawings, paintings, sculptures, murals-and we're blown away! So we want to showcase your talents. Older readers will recall the "High Art" column in the pages of the magazine, which featured all kinds of strange and wonderful creations. Beginning right now, we're reviving the "High Art" page online. It's a great way to showcase your talents-and it's free! Exhibit your art with us! Send us the fruits of your imagination along with a short "artist info" blurb so we can give you credit! We'll tell you if your art is high enough for the "High Art" page!

Send submissions to highart@hightimes.com

Jorge Returns!

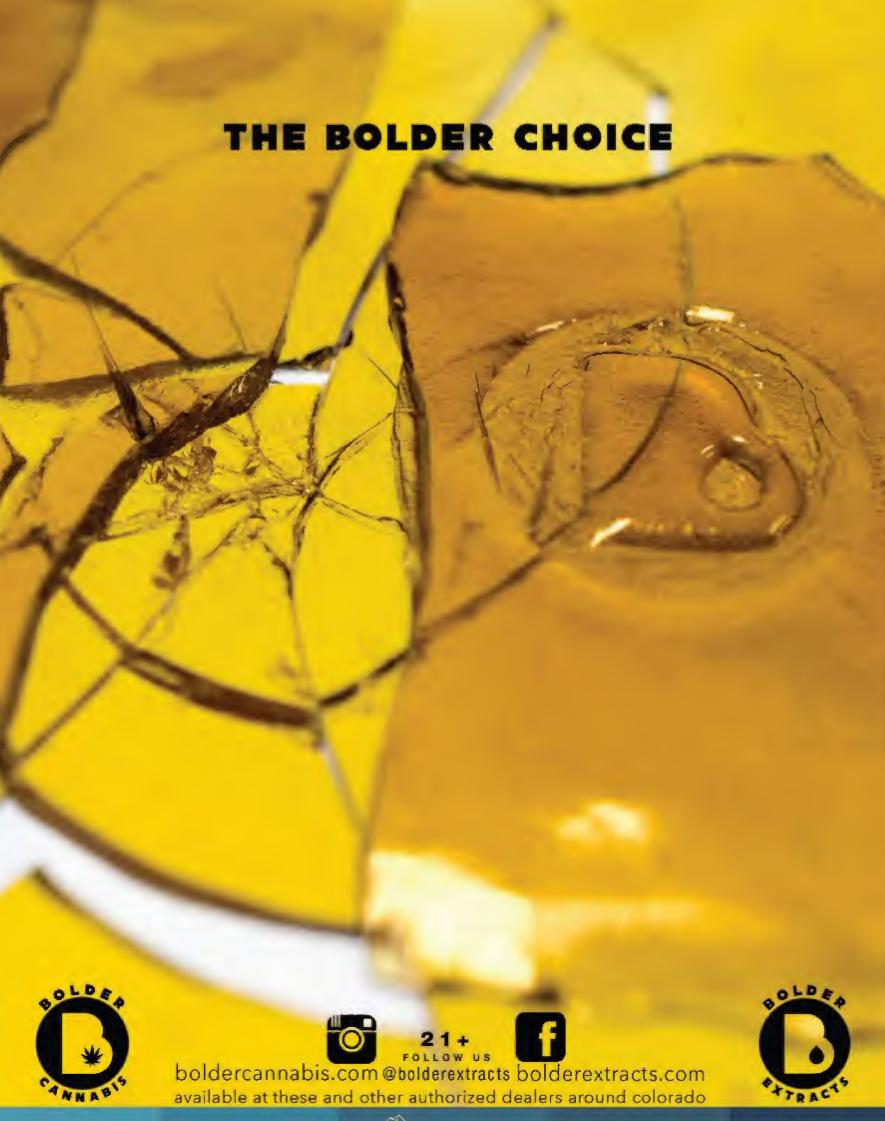
Not only is the cultivation legend back in the pages of *High Times*, Jorge Cervantes is offering his weed wisdom online! Check out the ganja guru's new column "Jorge's Cannabis Encyclopedia" for growroom tips extraordinaire!



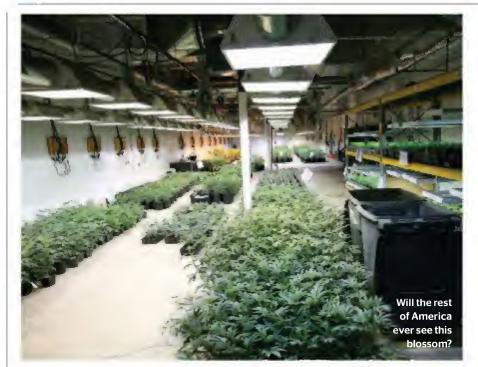
Miss July 2015

NAME: Ashley SCREEN NAME: AshboHash CITY: Taylor, MI OCCUPATION: Grower, hash maker AGE: 25

To enter or view contestants, go to misshightimes.com. You must be 18



10 Editor's Letter High Times July 2015



A Long Way to Go....

ften readers assume that our headquarters are based in California or Colorado, the two American states considered to be the nation's current leaders in cannabis cultivation and commerce. But we're based in New York, which has a strict medical marijuana law, virtually no access to the medicine itself and a sitting governor who's on record defining marijuana as a "gateway drug." Being based here keeps us from becoming complacent. We're in the same boat as the rest of the country; cultivation here, let alone possession and consumption, can still get you busted.

Only four states have legalized marijuana for adult, recreational use thus far—so there's still a long way to go. Naturally, if you're a grower in the other 46 states, secrecy is paramount. In "Growland Security," our science editor Sirius J provides essential guidelines for reducing your paranoia.

In this issue, we also welcome the legendary Jorge Cervantes back to the pages of *High Times*. For over a decade, Jorge was our resident grow guru. He's just published his invaluable tome, *The Cannabis Encyclopedia*, which will be excerpted in upcoming issues. You can also access Jorge's wisdom online in "Jorge's Cannabis Encyclopedia," a recurring column devoted to making you a star grower.

We also have to give a special shout-out to managing editor Jen Bernstein who's still recovering from her epic task of overseeing the testing of more than 100 vapor pens! Who said this job was easy?

Finally—the Chris Christie problem. The Governor of New Jersey wants to be Prez.

Not gonna happen—not if the ever-growing voting bloc made up of marijuana supporters has anything to say about it. In "Christie's Shadow," contributor Mark Miller examines his virulent, anti-pot stance.

Shit!! He just did it again! Just before we went to press, Christie called any tax revenue generated from government-regulated cannabis "blood money."

Like I said, we've still got a long way to go. Let's continue to make our voices heard!

HIGH TIMES

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San Francisterdam

The recent NORMLizer column "A Tale of Two Cities: Amsterdam or Denver?" (May 2015) with its discussion of pot tourism was interesting. However, mark my words: Once California legalizes, San Francisco will become the new Amsterdam. We already have the tourism, and the city will fully embrace becoming a "new and improved Amsterdam." America, here we come!

> Ganja Guy San Francisco Bay Area

Hip-Hop Hurray!

I would like to state how pleased I am with the way High Times has treated the "old school" hip-hop community. Coke La Rock has a book coming out titled Coke La Rock Shout Outs to Bars: The Evolution of the Hip-Hop Emcee. He was inducted into the High Times Counterculture Hall of Fame in 2010, at the 23rd Cannabis Cup in Amsterdam. He looks forward to working with High Times in the future and has had a great time working with you in the past. Thanks to everyone at High Times and their readers. Look for the book soon!

> Easy Hustle & Big Jeff Zulu Kings Production Universal Zulu Nation New York, New York

Highest Praise

My husband's liver-disease doctor recommended your website, but has asked that we never mention her name. An oncologist at the same hospital has also "unofficially" recommended your site. This site does nothing but help people. You are truly good people with good souls. You help folks whom you'll never even meet. I can never thank you enough for the helpful information we have gained from your site. God bless you and shine His light and glory on you. You have saved countless lives and eased the suffering of so many folks. Thank you. Bless you.

Claire-Marie O'Flaherty

We are truly humbled by your words, but we only report on the miracles of medical marijuana. We'd like to salute the dedicated researchers and medical professionals who reveal them daily!

Hemp vs. Pot

I have been and always will be an advocate for cannabis in all its forms, including industrial hemp, so I was excited



What happens when hemp growers are doing it simultaneously? Will hemp pollinate outdoor cannabis?

when the Farm Bill reclassified the hemp plant. But then a question occurred to me: What happens when hemp growers and marijuana growers are doing it simultaneously? Will hemp pollinate outdoor cannabis? I believe this will be a major issue in the near future.

> Jake Denver

Greenhouses may offer the best solution when it comes to the future of outdoor pot growing. However, in Canada, farmers have found no variation in the THC levels of their hemp or cannabis-and there are still lots of outdoor pot crops growing strong every summer.

Dissing Cheech & Chong

I'm a longtime smoker and very passionate about marijuana, so I'm a little disturbed about something and very curious why other stoners-including High Times-don't see what I see. For a long time I've kept quiet, but I find myself getting more and more bothered by this. I am talking about "weed icons" like Cheech & Chong! Why are these individuals weed icons? In no way can they ever be icons for marijuana users, let alone stand with us! The reason I say this is because they are partly to blame

High Times, 250 West High Times July 2015 57th St., Suite 920 New York, NY 10107 for the country's Email: hteditor@ views on marihightimes.com juana! In no way

end your letters to Feedback c/o

> did their movies help the weed movement. Yes, they're funny, but they also hurt our image more than anything ever has! Their entire image represents everything stoners are *not*: We are not stupid! We are not bums or losers! But because of those types of movies, that's exactly how the world views us. I just think it's kind of a mockery to have Cheech & Chong represent anything in the world of weed.

> > Jesse L.

Let us school you. Cheech & Chong were advocating for marijuana's legalization most likely before you were born. And Tommy Chong, especially, has been one of the movement's strongest voices for medical and recreational use. Maybe you're not aware that he served a year in prison after the Feds went after him for manufacturing bongs-and when he got out, he was just as outspoken in favor of pot. And when suffering from prostate cancer, he appeared on countless news programs promoting medical use. He remains one of the movement's shining lights.

As for your fears that Cheech & Chong "hurt our image," you're free to remain an overly serious, unsmiling person—as well as spectacularly misinformed!

Legalization in Latvia

I'm very happy for Latvia: We just got 10,000 signatures for the decriminalization of marijuana! This means that our citizen petition will now be passed to the government. We hope that some things are going to change around here, and we really hope that you will support us. We will send you updates on our progress.

> Renars Zvaigzne Somewhere in Latvia

More Image Problems

Just because some of your writers have written for Hustler magazine, that's no reason to advertise it. I think of *High* Times as being a clean magazine and Hustler as being a dirty one. I don't think that the cannabis movement will benefit from being connected with "Chester the Molester." Please distance yourself from Hustler magazine. I wish you all the best.

Stephen Dale

We're not sure how some of our writers' past employment detracts from their ability to be good journalists now.

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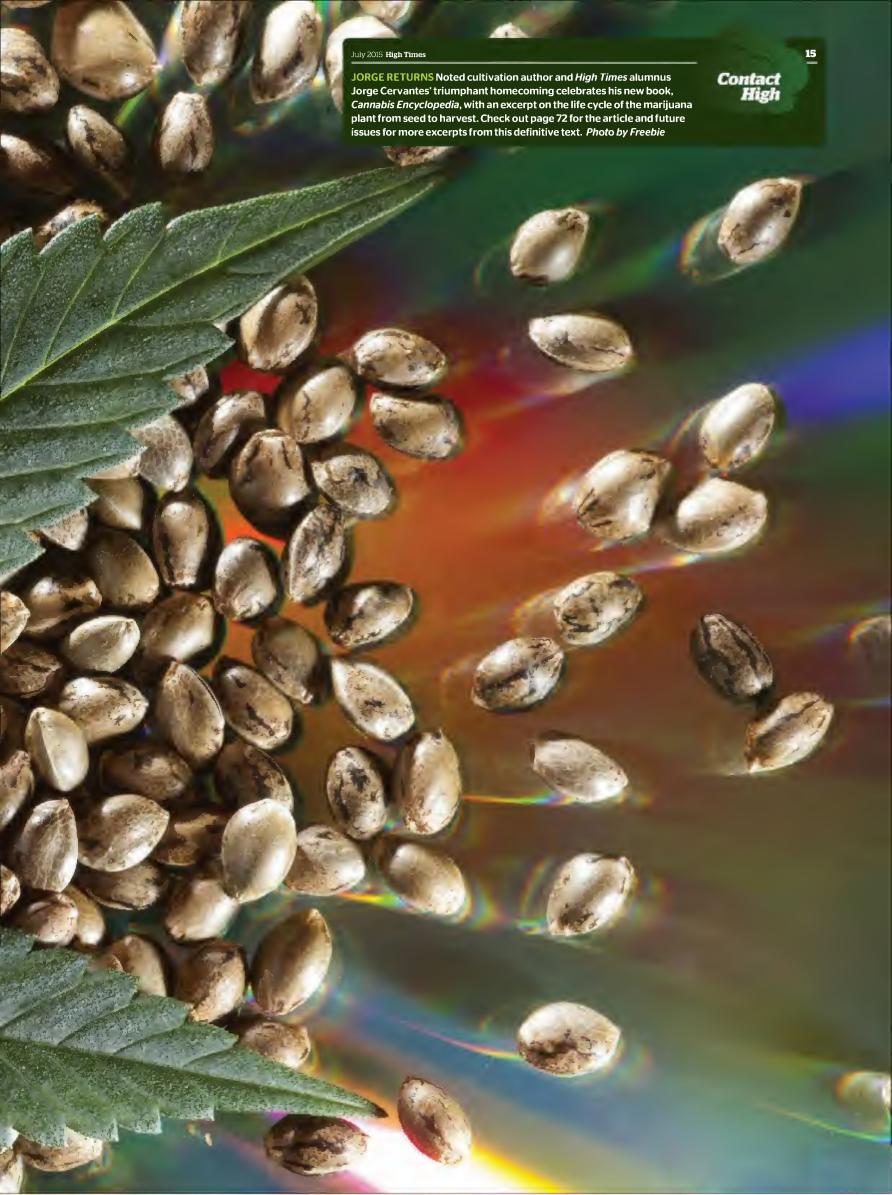
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Entertainment Brooklyn Buds Hit It Big

The Underachievers now achieve a buzz, p.34



Food Top Pot Wacky Taffy Kushie Kandy's Cup-





Christie's Shadow

New Jersey legalized medical marijuana in 2009. But Governor Chris Christie has fought legal cannabis medical or recreational—since taking office. Now he wants to be president. By Mark Miller

"What I'm not willing to do is legalize or permit recreational use or things that will lead to that. And so that's the line that I've drawn in the sand." Those were the words of New Jersey Governor (and potential Republican presidential candidate) Chris Christie, speaking at a

town-hall meeting in March 2014.

As governor, Christie has been an uncompromising opponent of recreational pot and has even obstructed implementation of the state's medical marijuana law. But now some New Jerseyans have had enough. In February,

a high-profile coalition of organizations, collectively dubbed New Jersey United for Marijuana Reform, announced a campaign to legalize recreational cannabis in the Garden State. The pro-bud bloc is composed of the New Jersey Municipal Prosecutors Association, the state chapters of the ACLU and the NAACP, and LEAP (Law Enforcement Against Prohibition).

The coalition isn't pushing for specific legislation at this time, but rather intends to study developments in Colorado and Washington in order to craft the best legalization law for New Jersey. The group is also mounting an informational campaign, hosting workshops and lectures aimed at educating Jersey residents on the benefits of legal cannabis.

This renewed effort comes a year after State Senator Nicholas Scutari (D-Union) introduced a bill in the New Jersey legislature to legalize recreational pot, which has yet to be released for debate. Though Scutari, a prosecutor in Linden, expects his bill to get an airing this year, he made a telling comment to The Philadelphia Inquirer: "I'm not in a huge hurry to get [the bill] to the governor's desk. In the next two and a half years I'm hoping for a groundswell of support so that it will pass."

"Two and a half years" is a reference to the state's term-limits law, which ensures that after Christie leaves office in 2017, he won't be able to run for governor again

Christie's obnoxious and bullying style of governance is well known. In April 2014, while appearing on his monthly radio show Ask the Governor, he dismissed the idea that legal cannabis would provide much-needed revenue for the state, saying: "For the people who are enamored with the idea [of] tax revenue ... go to Colorado and see if you want to live there." Thanks to legalization, he added, the state now has "headshops popping up on every corner and people flying into the airport just to come and

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That same month, Christie was confronted at a town-hall meeting by Paula Joana of Hopatcong, whose 15-month-old daughter Sabina died in December 2013 from epileptic seizures brought on by Dravet syndrome. A tearful Joana lambasted Christie: "This is what happens when you don't get the proper medical marijuana program installed."

In response, Christie offered some sympathetic noises—he was "horribly sorry" the child died-and then had the gall to say he'd be open to making changes in the medical pot program for the "truly sick" (i.e., the reason the program was created in the first place). But Christie had *already* slighted the "truly sick" when, in January 2014, he used a "pocket veto" to quietly kill a bill that would have enabled medical pot patients to receive organ transplants. And at a town-hall meeting in July 2014, the everopen-minded Christie barred a group of pot protesters from even entering the space.

There have also been intentional barriers set up by Christie's administration to stymie any discussion of cannabis. An attempt to contact his office was made for this article: After being transferred by

Christie offered some sympathetic noises—he was "horribly sorry" the child died—and then had the gall to say he'd be open to making changes in the medical pot program for the "truly sick."

the receptionist, an unidentified woman hung up on this reporter without a word of response. Other attempts to call the number for the New Jersey Department of Health's medical marijuana program were met by perpetual busy signals or nonstop ringing with no answer. Nor does the governor's official website cite "medical marijuana" as a topic important to his office, despite a comprehensive list of other subjects to choose from.

Ironically, although Christie has criticized the Drug War in the past and has even admitted the inevitability of legal cannabis, his personal ambition has taken precedence over the people whose lives are being ruined by the War on Drugs. The governor's opposition to cannabis is steeped in his own dreams of running for president in 2016. He knows that allowing legal pot on his watch might not fare well with his party, so he

prefers the status quo—21,000 pot arrests in the Garden State every year—and proclaims that legalization is "not going to come while I'm here."

Moreover, a President Christie would likely seek to overturn the current Justice Department policy not to prosecute state-legal cannabusinesses. There's also the possibility that he could appoint judges with anti-marijuana track records as prosecutors; bar legal pot industries from doing business with financial institutions; or empower the DEA to resume raids on legal weed retailers, dispensaries and cultivators.

So there's really only one advantage to a "Christie for President" campaign: He'd be vacating the governor's office in 2017, allowing New Jersey to finally implement a viable medical pot program while moving toward legalizing recreational cannabis outright. \(\psi\)

HIGH FIVE

Our Odious Opponents

Duplicity, bullying and willful ignorance characterize the worst pot prohibitionists.



US Rep. Hal Rogers Rogers is the co-founder of Appalachia HIDTA, an agency intended to "spread the word about the ever-present dangers of marijuana," which distributes free oral kits for parents to drug-test their children at home. At an April 2014 congressional hearing, Rogers also attacked the Justice Department for turning a "blind eve to state laws legalizing a Schedule I drug." Actually, eyes are being

opened-at last.



Harris is the leader of an antipot contingent in Congress that attached a rider to the 2015 federal spending bill attempting to nullify DC's voter-approved legalization effort. Harris blustered that anyone who opposes Congress's authority should move out of DC. He says legalizing would cause "legal chaos" (as if eight decades of prohibition hasn't) and wants the Justice Department to prosecute any DC official who helps implement the policy.



Chaffetz, who tried to thwart legal medical cannabis in DC in 2010, takes his anti-pot lunacy further than Harris: He sent a letter to DC Mayor Muriel Bowser on February 24 warning her not to implement D.C.'s "soft legalization" law, after previously threatening Bowser and City Council members with jail during a Washington Post interview. Chaffetz wants Congress to block any attempt to decriminalize or reschedule cannabis.

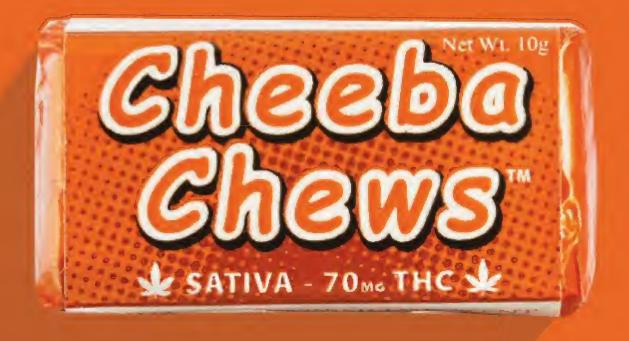


US Rep. Debbie Wasserman Schultz

(D-FL)Wasserman Schultz opposed legal medical marijuana in Florida in 2014. This irked Democratic fundraiser John Morgan, who bankrolled the measure. (It lost in November.) To win back his financial support, she offered a deal: stop criticizing and, in return, she'd support his new constitutional amendment to legalize medical pot in the state. Morgan opted to publicly expose her as a moneygrubbing sellout instead.



Gov. Scott Walker (R-WI) Last year, Walker refused even to consider decriminalization because sheriffs had told him-surprise!that pot is a "gateway drug." Showcasing his idiocy, Walker opined that weed should remain illegal because most people "wouldn't be sitting around a wedding reception smoking marijuana." He wamts Wisconsin residents who receive food stamps or unemployment insurance to undergo drug tests.



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UFC vs. THC

Despite the growing acceptance of marijuana as a medicine—and of mixed martial arts as a legitimate sport—UFC president Dana White doesn't see MMJ being allowed in MMA. Instead, he asserts, pot will continue to be prohibited by athletic commissions overseeing the sport's drug policy.

Many MMA practitioners have praised pot's ability to help them focus in preparing for a fight as well as recovering afterward. But White insists that "medical marijuana is for people who are cancer patients, for pain and things like that. I think it's going to be looked at as a type of painkiller... I don't think there's ever going to be a day where marijuana is okay for athletes."

White did concede that athletic commissions might raise the level of THC allowed in a fighter's system. Indeed, the Nevada Athletic Commission did just that in 2013, increasing the threshold from 50 to 150 nanograms per milliliter of blood.

Mamas, Don't Let Your Babies Grow Up to Be Drug Mules

A young mother was busted at the Columbus Correctional Institution in North Carolina earlier this year for smuggling marijuana into the prison by hiding it in her 4-year-old son's pocket.

The recipient of the secreted stash was inmate Cody Lambert, 24, who grabbed the weed from the tot's trousers while giving him a hug in the visitors' room. Unfortunately, the entire incident was captured on surveillance camera. Lambert was searched by prison staffers, who quickly found the pot, charging him and arresting the young mom. The woman's two children were turned over to social services.

GOOD ADVICE



Inside the Wide World

of Weed

Drivers near the University of Montana in Missoula recently received unusual instructions from a digital traffic sign, which advised passing motorists to "Smoke Weed Everyday."

The message was visible in all its glory for 10 to 15 minutes after the traffic sign was hacked. Making the prank even more impressive, the hacker (or hackers) had to get through a lock, a passwordprotected control panel and a menu sequence before punching in the message.

School officials say the sign's password has since been changed, and they don't anticipate any more dank declarations being beamed to oncoming traffic. The school doesn't plan to pursue a suspect or investigate the matter further.



Kelly Ripa Ripped

Kelly Ripa hilariously lampooned her good-girl image in a recent guest spot on Comedy Central's *Broad City*, which stars Abbi Jacobson and Ilana Glazer as two mismatched friends trying to make it in New York. The episode saw Jacobson visiting Ripa's pricey Manhattan loft to return a lost coat. While there, the two proceed to get hammered before Ripa rolls a joint with a little something extra sprinkled on top. "Don't worry," she slurs, "it'll just give us trippier visuals. Buckle up, buttercup."

This moonshine-guzzling stoner version of Ripa is also into paying for sex. But when two musclebound male escorts arrive, and Ripa offers Abbi "first pick," Jacobson flees the scene, ignoring Kelly's red-eyed pleas to stay: "No, Abbi, no—I ordered Domino's for after!"

Broad City is must-see TV and never shies away from pot. But Abbi and Ilana had never heard about dabs until they visited High Times in 2014. Check out a clip from their visit at hightimes.com/broadcity.

Senators Seek to Legalize Medical Pot Nationwide



An unprecedented bipartisan Senate bill would effectively end the federal government's war on medical marijuana. The Compassionate Access, Research Expansion, and Respect States Act would remove any risk of federal prosecution in states with legal medical pot programs.

CARERS aims to reclassify cannabis as a Schedule II drug under

the federal Controlled Substances Act. Pot's current Schedule I classification means that it has no officially accepted medical use in the United States.

Rescheduling cannabis would be a historic victory all by itself, but the CARERS bill would also remove the healing cannabinoid CBD from the CSA completely; allow medical pot businesses to use banks; expand research on marijuana's medicinal properties; and provide access to cannabis for qualified military veterans.

Getting a GOP-controlled Congress to pass CARERS appears to be an uphill endeavor. But the eventual rescheduling of cannabis under the Controlled Substances Act—once the wildest of pipe dreams—now seems like an inevitability.



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28 Highwitness News



Psychedelics Don't Cause Crazy

Despite decades of propaganda aimed at convincing the public that going mad is a real risk when using psychedelic drugs, a new study has found zero evidence to back up such claims.

Researchers at the Norwegian University of Science and Technology investigated 135,000 people—19,000 of whom reported previous experience with psychedelics—and found no connection between the use of drugs like LSD and psilocybin and mental-health problems like depression, psychosis and schizophrenia.

The study notes that, in addition to being less harmful to users than alcohol, psychedelics can actually be used to treat alcoholism, as well as depression and other psychological disorders. Researchers found that while bad trips are possible, psychedelics don't harm the brain, won't cause addiction, and should be viewed as relatively safe. The study concludes: "Overall, it is difficult to see how prohibition of psychedelics can be justified as a public health measure."

NC Hate

In a compassionless act, the North Carolina House Judiciary Committee killed a bill that would have allowed qualified patients access to medical marijuana. The measure was supported by 70 percent of North Carolinians but it was never even debated by state legislators as the Committee members unanimously voted the bill down while also blocking the House from considering any other measure addressing medical pot for two years.

THE POLITICS OF POT COOKIES



Not all weed cookies will get you stoned; some are algorithms that get stored in your Web browser. These types of cookies play a huge role in targeted advertising: They're the reason you see ads on Facebook and Google that seem specially chosen for you. And they're also part of the reason that marijuana is now legal in Alaska and Oregon.

The digitaladvertising company CampaignGrid has spent the past five years gathering information on how people feel about marijuana legalization. The computer cookies help determine the likelihood of potential voters being in favor of legalization, which is then reflected in a score. Pro-marijuana groups in Oregon, Alaska and Florida all used these scores in campaigns reaching out to likely voters in 2014.

The technique is an old one for selling consumer goods, but its application to politics could change how political campaigns seek to persuade the public.



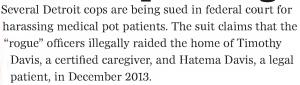
Carey: Ohio Proposal Is a Pot Monopoly

Ohio native and cannabis advocate Drew Carey has a bone to pick with a proposed ballot measure that would legalize pot in the Buckeye State. ResponsibleOhio's proposal would limit Ohio to 10 cultivation sites tasked with providing pot for the entire state. With just 10 licenses up for grabs, some fear that ResponsibleOhio's wealthy investors—who have already forked over millions to the group's campaign—could corner the market in cultivating legal pot.

Carey took to Twitter to voice his concerns: "I'm not sure I like ResponsibleOhio's plan for legalizing pot in Ohio. Sounds like they're creating their own monopoly like the casinos did." ResponsibleOhio responded with a tweet claiming that retail and manufacturing licenses would still be open to the public.

James Gould, a major ResponsibleOhio investor, says he hopes to drive drug dealers out of business by creating a regulated marijuana industry. Still, many Ohioans feel the group wants to clear the field of competition before cashing in exclusively on the green rush.

Detroit Cops Go Rogue



The lawsuit states that six officers wearing masks and carrying rifles kicked in the front door of the Davises' home, handcuffed the couple, and searched the house

without a warrant, after which they confiscated 50 cannabis plants. (Under Michigan's medical pot law, the Davises are permitted to have up to 72.)

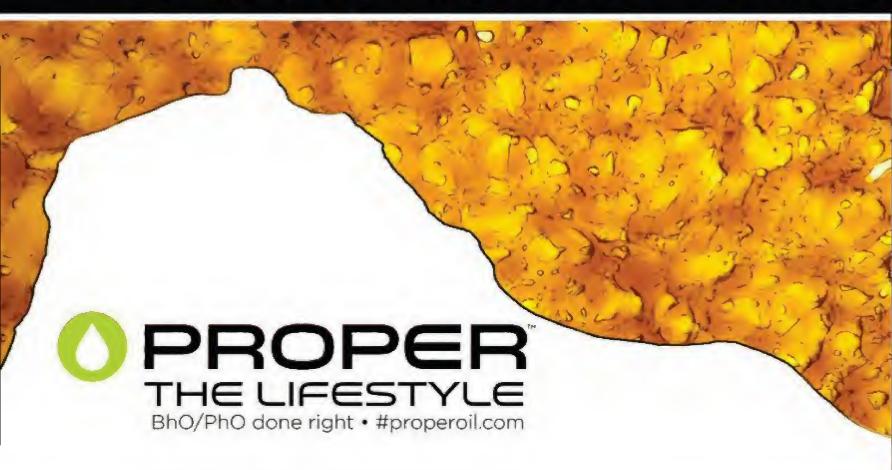
After plundering the home, the cops took Timothy Davis to an abandoned building and questioned him for five hours, according to the lawsuit.

The officers being sued were part of a narcotics unit that was disbanded by the city's chief of police following an internal-affairs investigation. One of the cops, James Napier, committed suicide earlier this year while under investigation for corruption by the FBI.



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HIGHWIRE

Dispatches from the international drug war. By Bill Weinberg



ISIS on Speed: The **Evidence Mounts**

For the ultra-puritanical jihadis of ISIS, it's getting harder and harder to deny that they're out of their minds on speed. In January, the UN Office on Drugs and Crime (UNODC) noted a surge in trafficking across the Middle East of Captagon (fenethylline), an amphetamine notorious for its popularity among the militants fighting in Syria and Iraq. Armed factions in Syria have been producing black-market knockoffs of the stuff, both to fund their insurgency and for their own fighters' use. According to Reuters: "Syrian government forces and rebel groups each say the other uses Captagon to endure protracted engagements without sleep."

A Hezbollah fighter told Vice News that ISIS fighters are taking Captagon in battle, and that the extremist "caliphate" is generating "hundreds of millions of dollars" from exports to the Gulf States.

Hash Copter Crashes in Spain: Albanian **Connection?**

A helicopter loaded with Moroccan hashish crashed in southern Spain after hitting a pylon, killing its two pilots, authorities said on January 28. The chopper went down in the wee hours



Lebanon's Legalization Push

Walid Jumblatt was a name frequently in the news as Lebanon's civil war raged in the 1980s. Now the longtime Druze leader is a member of Parliament with the Progressive Socialist Party and has emerged as Lebanon's foremost voice for cannabis legalization. Noting the resilient hashish economy in the Bekaa Valley, Jumblatt has been pushing cannabis as a cornerstone of security and economic development in the country, which shows growing signs of being drawn into Syria's civil war. In comments on January 14 to the daily As-Safir, Jumblatt said: "I hold on to my opinion on the necessity of legalizing the cultivation of hashish... It's time to allow hash to be grown and to overturn arrest warrants against people sought for doing so."



ear the mountain town f Cortes de la Frontera in Málaga province, apparntly while taking evasive naneuvers as a Spanish uardia Civil helicopter ave chase. The smuglers' chopper, painted lack to avoid detection at light, was carrying up to 00 kilos of hash. One of ne dead pilots has been Identified as an Albanian rmy major, Sokol Feka. Media reports in Albania ay he was an instructor t the Balkan country's Parkës air base.

Moroccan hash xports are booming, vith Spain the main ntrepôt to European narkets. Since June 2013, panish authorities have eized more than 100 ons of hashish in varius operations. Albania, heanwhile, has emerged s the top cannabis prolucer in Europe.

Saharan Drug Trade

Tunds Boko Haram **B**oko Haram rebels are aining ground at a rightening pace in northvest Nigeria, even mountng a bloody attack in **F**ebruary on the region's najor city, Maiduguri. **According to increasing** eports, the extremst movement funds its Insurgency by exploiting Migeria's strategic posiion as a crossroads of the

global drug trade. BBC lews asked on January 5: "How have Nigeria's hilitants become so trong?" The report cited he International Crisis Group (ICG), assertng that Boko Haram has forged ties with rms smugglers in the awless parts of the vast ahel region." Plenty If the group's weapons including tanks) have been plundered from the Vigerian army itself. And lenty more are thought b have come from Libya, where arms depots were poted after Muammar addafi's regime was verthrown in 2011. Trafficking networks ave been moving that lundered war materiel

cross the Sahel and

ne traffic into routes

lahara, integrating

Iready established for hoving drugs and other ontraband between West frica, Europe and Asia. In order to recruit Ighters, Boko Haram s also conscripting vilagers at gunpoint. But or special operations, it elies on criminals and langs, according to the CG, "paying them for ttacks, sometimes with a hare of the spoils." The media in India ave been hyping claims hat Boko Haram's dopepr-weapons pipeline s overseen by Dawood brahim, a top Indian Trug lord linked to the 993 terror attack in Mumbai, who is believed o be hiding in Pakistan. **DNA** India reported that Boko Haram is "target-Ing the lucrative drug narket in India. And for his it wants to exploit he well-oiled network of he D-gang spread across he country." ("D-gang" is he popular term for Ibralim's criminal organizaon.) "Just like any other error group, Boko Haram leeds money to sustain tself," an anonymous enior police officer said. By joining hands with he D-gang, they plan to nake money by smugling drugs into India." 💥

For updates on these

Weinberg's websites,

and other stories, see Bill

GlobalGanjaReport.com

and WorldWar4Report.com.

Boko Haram forging ties

















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July 2015 High Times High Style 33

Marijuana & Ultramarathoning

High in the Rocky Mountain town of Steamboat Springs, a young athlete is changing the face of ultramarathon running. Twenty-two-year-old Avery Collins is open about his use of cannabis to train for the grueling competitions, which often involve running for 20 hours or more. And pot seems to be helping to propel him to athletic greatness: Collins just took home first prize in the Sean O'Brien 50-mile ultramarathon in Malibu, California.

Collins uses Incredibles bars and, recently, Mary's Medicinals transdermal patches for many of his long training runs. He told High Times: "Ten to 13 milligrams is absolutely perfect for me. It's funny, the different effects between 10 to 13 and then the jump up to 20." Having often smoked socially (he prefers sativas), he tried running while stoned and found that "the time passed away really fast. You feel very in tune with everything around you, every

rock and root you jump over. It's really enjoyable."

Though he uses marijuana to train, Collins is emphatic that he never competes high. He doesn't view pot as a performance-enhancing drugin fact, he says, he doesn't use it on race day because "I wouldn't want to risk losing focus." But he's found that the right amount of pot enhances his workouts as well as his post-run recovery. After competing in Fat Dog 120, a brutal 120-mile race through the Cascade Mountains in Canada, Collins used a cannabis-infused topical from Dixie Elixirs to treat a tweaked knee and found significant pain relief.

Collins is a firm believer in the role that marijuana can play in helping runners train and recover from workouts, as evinced by the name of his fledgling clothing company: RunninHigh. Mountain running goes beyond times and speed—it's about the experience, and getting lost on the trail. Marijuana can enhance that experience. Singlets, jerseys, T-shirts and other racing gear are now available online for runners looking for a little high style. And Collins' ultimate dream? To someday open a combination running store and dispensary, thereby providing long-distance runners with both gear and great weed. Visit runninhigh.com.



sPOTLIGHT

Sprayground Executive Inhaler

Sprayground founder David Ben-David is making a splash with the Miami graffiti-culture skate-board style he brings to his unique line of backpacks. Ben-David says he wants to focus on "design, creativity, and functionality ... and have a chill time doing it." His mellow outlook is reflected in stylish, sleekly designed packs like the Executive Inhaler. The durable, water-resistant Inhaler features a padded back, a velour laptop sleeve, a plush pocket for your shades, and a secret stash pocket—so you can flaunt your cannabis pride without revealing your weed. Check out the Inhaler and other upscale backpacks for the cannasseur at *sprayground.com*.

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34 Entertainment High Times July 2015



Young Lords

The Underachievers step through the smoke of their Cellar Door to cultivate their own vision of the future. By Chris Parker

Who are The Underachievers? These days, who isn't? That's the sense of cast-out kinship that brought Issa Gold and AK together in the first place and has been guiding their heady, DIY hip-adelica ever since.

Back then, they were just a pair of curious 15-year-olds from Flatbush, Brooklyn. Seven years later, their debut *Cellar Door: Terminus Ut Exordium* is an underground sensation propelled by their trademark breakbeat-bap rhythms, grimy iridescence, streetwise, starry-eyed transcendentalism and the belief that "we getting knowledge from the motherfuckin' reefer smoke."

Weed is what first brought Gold and AK together in high school. Though they lived within a mile of each other, they'd never met. Then Gold and his buddy Juice (from Flatbush Zombies) hit up one of AK's friends for weed and found his future partner hanging on the guy's couch.

"Me and Juice were doing a lot of psychedelics," Gold recalls, "and people at that time in inner-city New York weren't that into psychedelics. It was weird to meet someone from the city who was interested in that type of stuff. So when we went over to [the connection's] house, we were talking about psychedelics, and AK was instantaneously interested. So we were like, 'Word! You're not scared and shit?'"

Gold had always been too curious to pay heed to social conventions, sitting down with the freaks and burners from art class because he felt artistically inclined as well. They were the first to turn him on to psychedelics and weed.

The seldom-remarked advantage to being an outsider is a lack of self-consciousness: If you've already surrendered to "weird," why would you give a second thought to how anyone else receives it? That ethos has propelled The Underachievers, dovetailing with the egalitarian spirit of YouTube virality and culminating with 11 million views for their "Herb Shuttles" video.

"Being younger and kind of different from everyone, people respect us, but they still think we're crazy," Gold says. "We're really self-sufficient and don't want anybody to tell us anything. We want to figure it out ourselves. It's not on an arrogant level; we just think we can do it ourselves."

The Underachievers have found a kindred go-your-ownway spirit in producer/artist Flying Lotus, who flew them out to LA and signed them after hearing 30 seconds of one song. His label, Brainfeeder, put out their first two mixtapes, 2013's *Indigoism*

"People respect us, but they still think we're crazy."

and *Lords of Flatbush*, before their *Cellar Door* debut. Flying Lotus's own recent emergence as a hot-buzz artist has only added kindling to The Underachievers' heat.

Gold doesn't have time to rest on those laurels, though. He's already on to his next thing. He's dubbed it the "Evermore Project," because he doesn't want to call it an album.

"I don't know what title to give it. It's a whole visual-presentation project," says Gold, who would ultimately like to create an entire musical culture that evolves with its audience, much like a movie franchise.

"I've always thought music alone was too small or boring for the progressive style we can bring to the table," he adds. "So we're trying to really expand it. I want to really control the aesthetic of what we are."

That takes a lot of planning, but Gold likes to look ahead. He's already thinking about the album he wants to tackle after his current project is done, something called *Allusions*. But how much thought can someone put into an album a year before even starting to write it?

"A lot and a little bit," Gold chuckles. "'A lot' because I shouldn't be thinking about it that much, and 'a little bit' because I'm really focused on the Evermore Project." **



If At First You Don't Succeed

Gold didn't get high until his friends set him straight. "They took me outside one day, and I was smoking, and they're like, 'You're doing it wrong, dude. You have to inhale.' And I don't remember what really happened after that."

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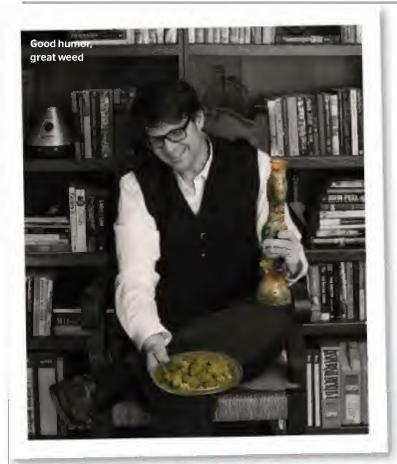
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36 Entertainment High Times July 2015



Freedom Walking

Walking Bicycles' Julius Moriarty is finally able to enjoy life again as a free man. By Mark Miller

For guitarist Julius Moriarty of the four-piece Chicago rock band Walking Bicycles, the obligatory musician-withsome-marijuana photo done for this story was no ordinary pot shot. That's because. unlike virtually every other musician depicted on these pages over the years, Moriarty had to wait until his probation on a felony pot bust ended December 27 to be in the same room with a bag of weed (still not legally, according to Illinois law, but at least he's no longer violating parole). And as you can see, he is thoroughly enjoying his renewed freedom.

We caught up with Moriarty by phone from his Logan Square office of Highwheel Records, the label that he runs with his bandmate and wife, vocalist Jocelyn Summers. We discussed his legal ordeal, and the creation of Walking Bicycles' latest album, *To Him That Wills*

the Way (released August 2014), a work that reflects the tragedy and triumph of his and Jocelyn's temporarily shattered lives. Moriarty was busted transporting some 50 pounds of pot in January 2008 while driving south of Chicago, eventually getting convicted of felony possession. But he refused to be a "rat," explaining: "That was never an option. I have to look at myself in the mirror. I did what I did-no one else I know was involved. And even though I'm married, my wife didn't push me to rat in order to get a shorter sentence."

After being incarcerated at six different state facilities for exactly three years, Moriarty was released on December 27, 2011, and placed on an additional three years' probation. He regards the time he spent *waiting* to find out how long he'd be in prison far more torturous than actually being behind bars: "Once you

agree to a plea bargain, you can start knocking days off the calendar. But the impending doom of that waiting period between the arrest and the sentencing is the worst of all."

His choice of words is deliberate, since "Impending Doom" is the title of the heavy, ominous opening track on *Wills the Way*, acid rock recalling Jane's Addiction in their heyday coupled with garage rawness.

Moriarty's take on prison life: "It wasn't a horror show for me, but for some othLeather and drummer Deric Criss easily picked up on the "emotional vibe" that the pair created.

Before his smoking days ended in January 2008, Moriarty's favorite strain was Trainwreck. But now that his ability to partake has been emancipated, he is ready to embrace the brave new world of weed. "Things have changed so much now with aromatics [terpenes], genetics and cross-pollination—I look forward to seeing it all," he says. He also expressed

"The art-meets-science aspect of pot is taking us into a golden age."

ers around me, it was. I saw horrible things happen to [inmates] who were not bad people." But he "didn't let anyone get into my space" and created a mental "buffer zone" by spending his days voraciously reading literature.

For Moriarty, the primary pain of imprisonment came from knowing what the separation did to his wife: "I could handle prison, but I laid a world of shit on someone I love."

Not only was the overall concept of Wills the Way inspired by these unique circumstances, the songwriting process was also unconventional. Jocelyn Summers penned some of the lyrics by referring to letters she and Julius exchanged while he was locked up, crafting songs like "Words" and the particularly moving "The Messenger," with its chilling lament as Summers longs for her husband's return: "In the world I'm out of place / In the world that put vou away." Julius adds that Walking Bicycles bassist Jason

genuine appreciation for the way "people are breaking boundaries when it comes to pot. The art-meets-science aspect of this is taking us into a golden age—from the way [cultivators] make all these amazing healthy products, to all the different highs you can get by mixing strains and using concentrates."

Asked if he's ever used herb to create music, Moriarty offers a complex response: "The short answer is no. We don't just get high to make music; that's not where it comes from. But the long answer is: Experimenting for many, many years with hallucinogens and marijuana leaves a fingerprint on your DNA, and that could lead you down a path toward creative expression.

"Pot grounds me, but I could take it or leave it," he adds. "When I can [smoke it again], I can, but it's not my only defining characteristic. It's just something I will occasionally do when I can one day." **



reewheeling

Julius and Jocelyn founded Highwheel Records in 2005. "We didn't want to be a commodity on another label," Julius says. "We didn't have enough leverage to call our own shots, so we started our own label."







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Narco-Imperialism Deconstructed

Chronicling how terror is used to facilitate policy changes that benefit the international private sector.

Dawn Paley is one courageous journalist. Her travels through Mexico, Colombia and Central America have brought her to the frontlines of Drug War danger and militarization, producing first-hand reportage from communities terrorized by narco-gangs, paramilitaries and "official" security forces alike. Paley portrays these forces as constituting a single nexus of terror, thoroughly integrated into the structures of the "legal" economy.

Paley depicts the same structure of oppression in the Drug War as in the Cold War before it and the War on Terrorism now augmenting it.



Capitalism
Dawn Paley
(AK Press)

Whether the enemy is leftist guerillas or narco-gangs, goons with guns are useful in terrorizing peasants struggling to protect their lands from oil and mineral exploitation. So there is an inevitable intersection between Drug War militarization and corporate power. Paley provides examples from Putumayo to Chihuahua.

And of course the narcogangs intersect with the state apparatus that ostensibly

opposes them. Paley may oversimplify a bit, portraying the cartels as in league with regional governments, rather than a web of shifting alliances.

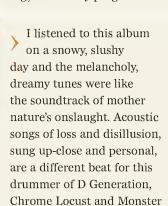
Paley writes that the "drug war has designs other than stopping the flow of narcotics." She later identifies these designs as "appropriation of land and territory." But many of the Drug War architects may suffer from enough doublethink to believe their own rhetoric. Nor is this comforting. We ultimately have more to fear from zealots than cynics. Bill Weinberg

MUSIC RECOMMENDATIONS



WandGolem
(In the Red Records)

Wand manifests a mystical mix of garage psyche merging the acid-tinged vocals of Cory Hanson with Sabbath sludge steered by Lee Landey (bass) and Evan Burrows (drums), as on "The Unexplored Map". Songs departing from Wand's template prove equally intriguing; the moody prog of



"Reaper Invert", a softer side evinced by "Melted Rope", and keyboard wizardry defining "Floating Head". "Planet Golem" is a lysergic meltdown with a primordial bridge flooded by the charging resumption of the main riff, while "The Drift" is a climax floating abstract into the ether. Mark Miller

Magnet fame. Standout tunes are "Watch the World" and "Out of Air." Beatles fans should check out this and its simultaneously-released sister album *Michael Wildwood. Sad America* reminds me of John Lennon's Dakota demos, and Grimm's fairy tales—where the monster wins at the end. *Chris Simunek*



Wildwood

Sad America

(Beyond Records)

Lost Themes
(Sacred Bones)

Despite its title, this is a collection of new music from legendary horror director John Carpenter, who scored many of his own films (*Halloween, Christine*). From the dreamy "Wraith," shot through with jagged, sugar-metal guitar, to the throbbing "Night," the tracks are gloriously menacing.

The chilling "Vortex," especially, with a relentless beat and stacked analog-sounding synths, comes across as the soundtrack to a brief, terrifying bloodbath. This album is the sonic equivalent of an orchid that turns out to have a mouth filled with needles. Worth your money. *Polly Watson*



Buffalo KillersFireball of Sulk
(Sun Pedal Recordings)

Buffalo Killers have done it right again with their latest album. In what could have seemed a sparse, six-track album, the four-piece rock-n-roll band manage to pack in plenty of the nourishing guitar riffs, leading bass lines, precision percussion and catchy hooks for which they're becoming

well-known. Smoke a jay and lose yourself in unique, stony rock songs that manage melodies with great staying power. "Don't Cry To Me" is especially catchy and rounds out the album title nicely with the underlying point: Quit your sulking, we're rocking the fuck out here. Mary Ought Six



Other Planes of Here (Stomper)

Now in their 29th year, and seemingly indestructible, the pop/rock extravaganza that is The Figgs continue to amaze with their vertiginous energy and prolific output. Their years of ambitious reach and tenacity find full expression in incendiary, mind-blowing live performances,

and king-making studio recordings. Other Planes of Here is their 14th album, in addition to three EPs and 17 singles. This record is ardent, fervent, fierce, and shows full command of the "roll" in "rock'n'roll". Get a ticket to their next show, and experience rock'n'roll done right. Josh Chambers

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MUNCHIES

THC Taffy

The founder of Kushie Kandy shares the terrific THC-infused taffy recipe that got his company started.

The increasingly legal status of marijuana is attracting a host of talented young risktakers eager to make their mark on the cannabusiness scene. Tyler from Kushie Kandy is just 22 years old, but his new company has already won two Cannabis Cups in 2014 for its fun-flavored candy bars, Strawberry Banana and Cinnamon Roll, which went on to become bestsellers. Of the difficulties involved in running a small business, Tyler says: "It's just me full-time. But if you want to do it,

go for it! Be original and work really hard—don't be scared."

When he started Kushie Kandy in Michigan in late 2013, Tyler was mainly focused on a chocolateflavored taffy that he has since discontinued in favor of candy bars. But he retains his fondness for the Kushie Roll, a soft, sweet and chewy taffy that's very easy to make and infuse. "This is the first product I ever marketed and put into full production," Tyler says, "and it's what eventually led to me starting Kushie Kandy!" Elise McDonough

KUSHIE ROLLS

5 grams activated hash oil 2 tablespoons melted butter 1/2 cup cocoa powder 3 cups confectioner's sugar 1 teaspoon vanilla extract 3/4 cup dry milk powder 1/2 cup white corn syrup

Equipment:

Scale (to weigh out the taffy pieces)

First, melt the butter over very low heat and add the hash oil. Stir together until all of the oil is fully dissolved in the butter. Once properly mixed, pour the hash-infused butter into a container and set it aside until the next step.

Next, add the remaining ingredients into your bowl, starting with the cocoa powder, confectioner's sugar,

dry milk powder, corn syrup, vanilla extract and (last but not least) the melted hash butter. Finally, knead the ingredients together as you would for bread dough until you have a smooth, shiny, even mix that looks like a big taffy ball.

Next, roll out the taffy into long strips and cut them into pieces weighing 10 grams each. You should end up with about 50 pieces, each of which will contain approximately 50 mg of THC. Wrap individually in wax paper by rolling them up and twisting the ends to give it a little seal. Store in an airtight container in the fridge and they'll last up to one month. It's best to let the taffies warm up to room temperature before you consume them. Enjoy!



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MARKET ANALYSIS

(Master Kush)

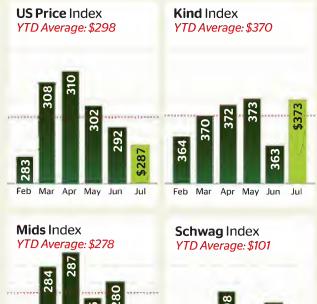
"Wonderful smoke

indeed!"

Scranton, PA

Prices by the ounce

Index Watch: The US Price, Mids and Schwag indices all finished July below their previous month's average, and Mids reached its lowest average price since October 2014 (\$248). Meanwhile, the Kind Index rebounded from a sixmonth low to tie its highest average of the year (\$373).



Apr May Jun Jul Feb Mar Apr May Jun Jul

TRANS HIGH MARKET QUOTATIONS

	CITY		PRIC
Alabama	Birmingham	Bubba Kush	\$360
Alaska	Anchorage	Jack Herer	320
Arizona	Phoenix	Platinum GSC's	200
Arkansas	El Dorado	Alaskan Thunderfuck	400
California	San Francisco	Grand Daddy Purps	260
Colorado	Denver	Blue Dream	280
Connecticut	Hartford	JillyBean	350
Delaware	Newark	Jack Herer	350
Florida	Miami	Super SIIver Haze	350
Georgia	Atlanta	Purps	400
Indiana	Indianapolis	White Widow	380
lowa	Cedar Rapids	OG Kush	350
Maine	Portland	Deadhead OG	320
Maryland Maryland	Baltimore	White Widow	360
Massachusetts	Fall River	Afghan Kush	300
Michigan	Traverse City	Girl Scout Cookies	260
Minnesota	Minneapolis	Sweet Tooth	300
Mississippi	Canton	Blue Dream	325
Missouri	Springfield	Sour Kush	300
Montana	Kalispell	White Widow	220
Nevada	Reno	Sour Diesel	200
New Jersey	Hoboken	Sour Diesel	380
New York	New York	Strawberry Cough	400
North Carolina	Raleigh	Guava Chem	400
Ohio	Columbus	JillyBean	330
Oregon	Portland	Girl Scout Cookies	200
Pennsylvania	Scranton	Master Kush	250
South Carolina	Greenville	Trainwreck	260
Tennessee	Nashville	Domestic	180
Texas	Austin	Chemdog	300
Utah	Salt Lake City	Blue Dream	380
Vermont	Burlington	Pineapple Chunk	300
Virginia	Richmond	Master Kush	360
	Seattle	Headband	300
INTERNATIONAL			
Canada	Ottawa Toronto	White Widow Jack Herer	C\$125 C\$18
England	London	Silver Haze	£280

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(Deadhead OG)
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Portland, ME July 2015 **High Times**









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- LOW BATTERY INDICATOR
- · CERTIFICATE OF AUTHENTICITY
- · C-TENSIL
- · CLOUD PENZ STICKER
- · ZX MEDI GRADE DOUBLE COILS
- · 2X THE BATTERY SIZE
- COMPACT CARRYING CASE
 CLOUD PEN STASH JAR
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VAPORPEN REVIEW

By Jen Bernstein



f you thought portable vaporizers were just a fad, think again! The meteoric rise of vape-pen technology shows no signs of slowing down. In fact, vape pens have become so ubiquitous that the Oxford Dictionaries even chose "vape" as its 2014 Word of the Year.

And who's responsible for that? We are! Concentrate and cannabis connoisseurs have fueled the popularity of the word.

When *High Times* first reviewed vaporizers in 2011, we tested 17 devices: 14 for flowers and three for hash oil. In 2012, 15 vaporizers got the treatment. Last year, we upped that total to 32.

This year, however, we pulled out all the stops, tackling more than 100 concentrate and flower vaporizers. It was a herculean challenge, but our intrepid panel of judges courageously embraced the mega-high that the task required.

Because of the sheer diversity of the marketplace, and with so many improvements to past models, we chose not to group the pens together this year. Instead, our green-ribbon panel of 27 judges scored each device on its own merits, for such things as heat delivery (flowers) and atomizer quality (concentrates), as well as hit/pull, aftertaste, durability, stealth, button quality, mouthpiece quality, style/design, ease of refill and packaging. Then our Scorebook software automatically tallied each judge's score and allowed us to view their comments in real time.

With the vaporizer market now thoroughly flooded, *High Times* sought to take guesswork out of the equation for potential buyers. Herewith, we unveil our choices for the Top 25 vaporizer pens for concentrates and the Top Five pens for flowers on the market today. Happy vaping!

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VAPORIZERS FOR CONCENTRATES





2. Dr. Dabber Ghost, by Dr. Dabber Coming in a close second, the Dr. Dabber Ghost was applauded by judges for its "super hits," "good packaging" and "minimal lights." The Ghost's atomizer is a step up in quality, using high-resistance Grade 4 titanium wrapped around a wick for its coil, helping to create "nice clouds" and an overall "solid pen." While one judge complained about the "small slit" for the mouthpiece, another commented that the Dr. Dabber Ghost was an "easy high score." Includes: USB charger, dabber, container and extra atomizer Price: \$84.95 vapornation.com



by BHO Pen The "smooth-hitting" two-tone metal Daborizer was a favorite for its "good parts and good hits," standing out from its competitors thanks to "lots of accessories, a nice box and a great look." Judges liked the weight, feel and balance of the Daborizer and remarked that having "multiple tops for CO, and BHO is a solid offering"-although, of course, having "too many parts" could be a drawback for those new to vaping. Includes: USB charger, container, dabber, neck strap, silicone mini-mat and stand Price: \$69.99 bhopen.com

3. The Daborizer,



King Pen The 710 King Pen was the only vaporizer we tested that magically appeared with prefilled CO, cartridges, ensuring a different taste to the shatter we tried in the other vape pens. Judges gave the blackand-silver snap case high marks for being "elegant" and thought the pen looked like a cool "light saber," with a "good, solid design" that also "hit well." Includes: USB charger and snap case Price \$2999. prefilled cartridges sold separately Wholesale inquiries, email

info@710kingpen

4. The 710



5. The Dab OTG, by Dab OTG Last year, Dab OTG took top honors for Best Overall Pen and Best Hit, with judges lauding its "unique design" and "monster hits." This time around, the company's one-of-akind, hand-blown glass mouthpiece ("Beautiful!") scored high in heady design points; it also "hits really well" for a "hippie pen" and was described by one judge as "phenomenal overall." Includes: USB charger and two atomizers Price: \$75

dabotg.com



Micro VapedVaporizer 3.0

Once awarded a third-place prize for Best Product at the **High Times Cannabis** Cup, Micro Vaped's Vaporizer 3.0 earned the judges' praise for its "glass mouthpiece, which made for a nice hit." The Nano Vubbler glass attachment with titanium coils was a "nice option" alongside the vape's glass dome with a wickless coil and standard mouthpiece. But this is definitely a "nextlevel" pen that cuts down on stealthiness and portability. Includes: USB charger, additional skillet, globe attachment, Vaped stand, lanyard, tool, adapter and case Price: \$79.99 vapornation.com



7. The Source Orb, by Source Vapes Offering five different atomizers (two double-coil and three single-coil) for concentrates, the Source Orb had judges raving about its "variety" and "crazy, strong hits." The stainless-steel royal gold Orb that we tested was pronounced "sleek" and "well-weighted," with a "unique airflow" design ("groovy in a futuristic, high-tech way"). Even so, the vape pen's temperature settings were "too high" for one judge, who complained about a "harsh hit" that could have easily been adjusted if the instructions specified how to change the voltage. Includes: Five atomizers, wall charger, USB cable, tool and carrying case Price: \$79.95 sourcevapes.com

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8. Apex Pen With a battery twice as large as those of more traditional vape pens, the Apex also lasts twice as long without recharging. One of the most creative designs we've seen had the judges gushing that it's "like a femme fatale vaporizer grenade" and "steampunk as fuck." The "awesome ninja grip" will help to conceal use at a bar or concert. "Heavy" and "well-balanced," the Apex's design reduces the risk of toppling over and breaking, though the glass globe seemed "fragile" to some. Reviews like "Holy crap, the hits are so pure!" and "Holy shit, this thing kicks ass!" are enough to make us bust this out right now. Includes: USB charger, battery, bulb atomizer, herbal atomizer, liquid atomizer and container Price: \$120 apexpen.com

9. Power Pen

Even though the Power Pen looks generic, the judges thought that it differentiated itself from similarly modeled vape pens like the Cloud or Micro G by its "great pulls" and "good, strong hits." Also adding to the variety are two different tips, one silver and one gold (funneled), that screw onto the atomizer base along with an e-liquid attachment, making the Power Pen a good all-round multi-use vape pen. Includes: USB charger, wall adapter, e-liquid atomizer attachment, silver and gold "nail" tips, tool Price: \$50

10. Dübe 2.

by White Rhino An updated version of the original Dübe, the Dübe 2 includes improvements made to the mouthpiece for increased airflow (addressing a complaint made in last year's review), a better battery, and the ability to vape liquids with a new attachment. Judges found that this "cool, slim" stealth pen with its "multi-use options" was good for both CO, and BHO, making the Dübe 2 "convenient" and "powerful." And apart from one judge taking "a few minutes to figure it out," there were no complaints about ease of use. As one judge commented, "The Dübe 2 is a good sequel." Includes: Charger with power supply, cleaning tools, nice dabber Price: \$59.99 whiterhinoproducts.com

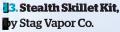
11. Boro Pen.

by Grav Labs The Boro Pen (short for "borosilicate," similar to Pyrex) is the only vape pen of its kind on the market combining glass and chrome technology. Designed specifically for concentrates and vaping on the go, the Boro Pen succeeds at "large, cloudy hits," but its "big and bulky" size is a definite drawback. One judge noted that it seemed like a "manly, beefy" vape pen, while another proclaimed that the "snap case rules." Includes: USB charger, glass dome, tool and two atomizers Price: \$119 arav.com



by Utopia Planitia Judges complimented the "nice, solid design" of this stainless-steel pen, admiring the elements that made for an "enjoyable and good-tasting" vaporizing experience. The only drawback was the Minicron's separately enclosed glass dome (an additional attachment sent in for review), which isn't meant to fit into the "cool case." Includes: USB charger, snap case and pen Price: \$44.99

w9tech.com



powerpen.com

The gunmetal finish n the Stealth Skillet ben, along with all the accouterments in the tit, makes this an "allenclosed slick piece." he judges found that he "sturdy" Stealth killet produced lenty of vapor and "a reat hit." Stag Vapor Lo. also introduced ts new "Ceramiwick echnology," which ises a porous ceramic od in the atomzer rather than the tandard silica wick o produce what the nompany insists is a cleaner hit." ncludes: USB charger, ool, lanyard, atomizer nd container Price: \$69.99 tagvapor.com



stealthy Black Edition vape pen by KandyPens was well received by the judges for producing "big, thick clouds" that "pulled with ease." It also comes with a lifetime warranty for both the battery and the atomizer. Includes: USB charger, extra atomizer, mouth quards, tool and cleaning brush Price: \$99.99 kandypens.com



15. Fog Pen, by Myster Part of the fun of dabbing on the go is experiencing the vapor as it is formed by the atomizer. The Myster Fog Pen illustrates just that with its unique clear chamber, which is stealthily kept under wraps until use with an actual pen cap. The "very cool cover" is a clever disquise that not only makes the unit "look like a writing pen," as one judge pointed out, but "also protects the glass from being broken." The judges found this to be an "excellent quality" vape pen, with hits that are "really smooth." Includes: USB wall charger and extra atomizer Price: \$60 getmyster.com



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16. The Trippy Stix 2.0, by Pure Epic

Pure Epic has made a series of improvements to its vape pen since our 2014 Buyer's Guide, including shortening the chamber, switching to all-titanium parts, and offering gold-tip mouthpieces that aren't just flashy but are meant to be more sanitary. The new Trippy Stix's pluses-"love the design," "good pulls" and "more enjoyable than the 1.0"-made this an overall "great" pen in the eyes of the judges, who complained only about the potential of losing the mouthpieces ... and the Trippy Stix includes a few extra of those. Includes: USB charger, extra Trippy tops Price: \$140 therealtrippystix.com

17. Cloud Pen 2.0, by Cloudpenz For the second year

in a row, the Cloud Pen has earned a place in the High Times Buyer's Guide. As the "go-to" vape pen for most entry-level users, the Cloud Pen impressed our judges with its "compatible" size and "easy-to-use" functionality, along with a "zip-up kit" that includes "everything you could want or need." An upgraded atomizer that was "deeper and wider" meant less refilling and won bonus points from the judges. Includes: Wall charger, container, wipe, atomizer, mouthpiece and authenticity card

Price: \$79.99

cloudpenz.com

18. Boom Mini Reload 2-in-1, by Agni e-Cigarette (Boom Vaporizer)

This stainless-steel "perfect starter pen" is easy to use and offers a "slim, nice, plain, discreet look." Though the packaging appeared "inexpensive," the Boom Mini Reload-which is billed as an e-cigarette-"pulls fantastic." However, the mouthpiece "would be better if it wasn't spring-loaded"; it confused judges by "moving in and out like a pen" and would have scored higher if it weren't for the "clicking thingy." Judges also experienced difficulty opening the box and removing the pen from its less-than-stonerfriendly packaging. Includes: USB, two atomizers, dabber and brush Price \$30 boomvaporizer.com



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19. Vape Sabre,

by Puff Nugs With the biggest atomizer on the market, the Vape Sabre's coil allowed our judges to create some of the biggest hits we've ever seen. "Huge pulls" and "one of the best tanks for filling" made up for the pen's "awkward outside appearance." The Puff Nuggs website informs us that "small snorkel holes" were added to the atomizer design to help with the airflow, and the company also upgraded to a larger battery to power the coil. "Don't judge a book by its cover," one tester concluded. "This pen delivered great hits." Includes: USB charger, silicone case, dab tool

and brush Price: \$79.95

puffnuggs.com





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20. Yocan W1 Kit, by Agni e-Cigarette

(Boom Vaporizer) The Yocan vape pen, with its "stylish" and "slick design," provided judges with "mild hits" from its glass chamber, which features what Yocan describes as "Nero Technology"-instead of direct contact with the atomizer, the wax is distributed over a thin metallic plate heater, eliminating wicks and leading to less clogging and damage. The "adjustable temperature with one button is awesome," said one judge, and the "easy-to-fill" chamber makes the Yocan a "dependable" choice. Includes: USB charger, two atomizers and dabber Price: \$40 boomvaporizer.com



21. Cloud V Mini. by Cloud V

The Cloud V Mini is similar to other makes and models of vaporizer pens, but there's no denying that its size and portability make it a "super-fun" and accessible vape for beginners. The "great size for stealth," "smooth style" and "leatherish" snap case all combine to deliver a nice "self-contained" kit for dabbers on the go. Includes: Case, charging cable, dabber and mouth guards Price: \$54.99 cloudvapes.com



22. Skycloud with bubbler), by KandyPens We had a lot of un testing the Skycloud and its bubbler attachment. Judges love the potential and great initial design" and said the "vape-pen ig is a hoot." But while the "large plass mouthpiece hit well" and could double as a "bong moker's pen," the attachment was Ineither durable hor convenient." Includes: USB charger, attachments (for e-liquid, tobacco and concentrates), tool and brush Price: \$119.95; bubbler attachment,

\$69.95

kandypens.com



23. Go.Pen, by O.PenVape Definitely one of the most convenient vape pens on the market, the Go.Pen uses prefilled CO, cartridges bought at dispensaries, which are then attached to the battery base. With no button to push, there's no temperature to set or on/off to click. The judges liked the Go.Pen's "no-loading" technique, which made it "supereasy" to use, and praised its "uncomplicated" USB charger. Includes: USB charger and battery

Price: \$49.99

openvape.com



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24. Helix Vape Pen, by Grav Labs

Featuring a battery base and coil similar to most vape pens, the Helix breaks the mold with its unique triangular glass-dome attachment. Designed with three micro-holes and a carb, the pen had the judges confessing that they loved "watching the helix plume build up" and "swirl" within the "mushroom dome." Though they found it "slow to heat at first," the judges also praised the Helix for its "great draw" but worried that they would need to "replace the glass" in the case of an "unfortunate and tragic accident." (Note: This pen is not for the accident-prone.) Includes: USB charger, glass mouthpiece, glass adapter, three atomizers, tool, battery Price: \$109 420science.com



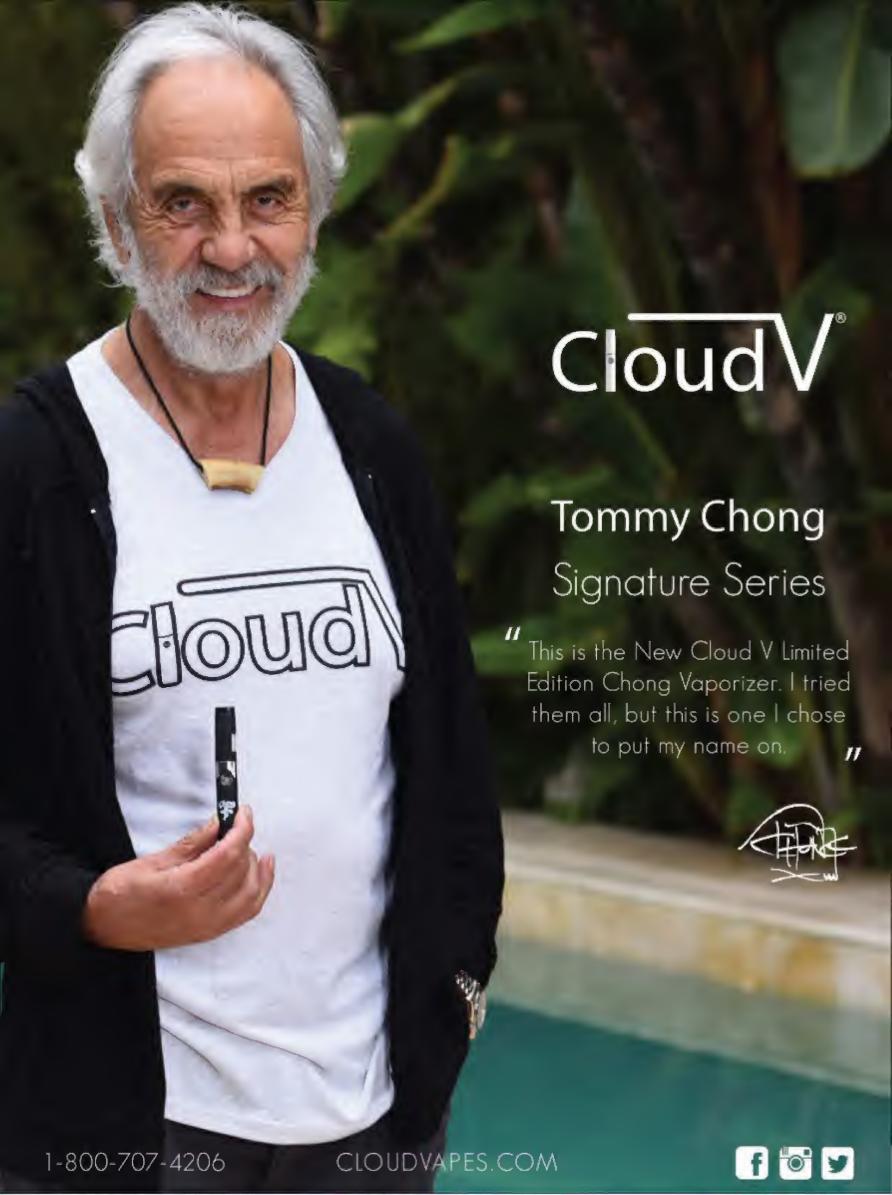
25. Taylor Gang Micro G.

by Grenco Science Rounding out the Top 25 is the Taylor Gang Micro G, a vape pen that "performs as expected" but comes with "cool branding" and "stylistic moonlanding" packaging to help you vape into orbit. While the atomizer was pronounced "pretty good," it offered "good" hits and draws, making this a "compact kit full of lots of little accessories" that you wouldn't "normally expect" (the Taylor Gang patches, for example) from a vaporizer. Includes: USB charger, two atomizers, tool, mouth guards, two patches Price: \$99.95 gpen.com



Price: \$399 storz-bickel.com







2. Pax 2, by Pax Labs

The Pax 2's packaging reminded our judges of Apple products, with its "simple yet high-tech similarities ... sleekness and stealthiness." The anodized brushed-aluminum unit (available in four colors) is "small and discreet" without feeling insubstantial. It offers a "nice heft in the hand," with two interchangeable mouthpieces for vaping: The flat mouthpiece lies flush, making it nearly impossible to see ("incognito!"), while the raised mouthpiece offers a "better pull." The Pax 2 vapes "beautifully" without scorching the flowers and was a welcome last-minute addition to our review.

Price: \$279.99 vapeworld.com



3. G Pro Herbal Vaporizer, by Grenco Science "Easy to use" and requiring "little to no effort," the G Pro Herbal delivers a "nice, smooth hit." With three temperature settings, a durable body and a stainless-steel chamber, this handheld unit impressed our judges as being perfect for "newcomers" to the flower-vaporizer market.

Price: \$99.95 gpen.com



4. Magic-Flight Launch Box, by Magic-Flight

With "immediate heat delivery" at the "push of a battery," Magic-Flight's hand-carved wooden box reminded judges of the "old-school" days when "getting high was easy." It had a lot of "hippie appeal," said one, with a style that was both "awkward" and "charming" but "got the job done." Easy to refill with the help of a sliding lid that keeps your herb in place on the go, the Magic-Flight is made in the USA ("with a lot of TLC") and is perfect to take to your next festival or concert. Price: \$119

magic-flight.com



5. V2 Pro **Series 7** Vaporizer, by V2 Cigs After a series of clicks, the judges found the heat delivery to be "fairly easy," with three temperature levels to choose from. The pull was also "easy and continuous at the proper temperature, with little to no aftertaste." Available in three colors, the V2 Pro was "fairly stealthy" and scored design points for offering mouthpieces for liquid, wax and flowers. Price: \$149.99 v2cigs.com



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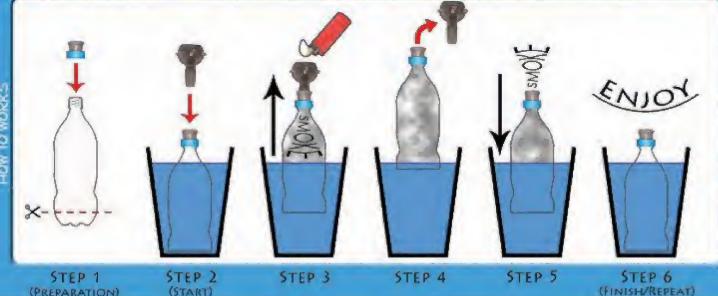
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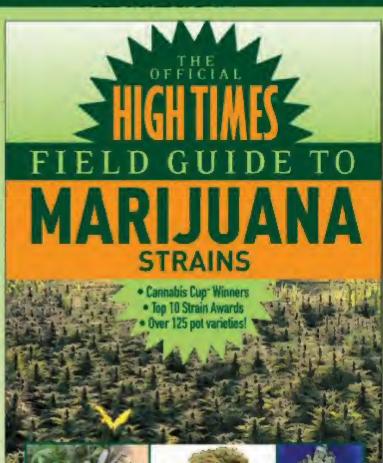


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Growland Seculiary

Despite the increasing success of legalization efforts across the country marijuana gardens still draw a lot of heat. Keeping a tight veil of secrecy around your grow will prevent eviction, the theft of your plants and unwanted visits from the police. By Sirius J

Be Paranoid

Don't tell anyone about your grow, unless you trust them completely. If cultivation is illegal in your state, you're better off keeping your grow a total secret. If anyone finds out, you can consider the operation pretty close to compromised. If you've taken the necessary precautions to physically conceal your grow op, letting someone know defeats your attempts at secrecy. As the saying goes, loose lips sink ships—and nothing can be truer in the underground manijuana market.

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Dealing With Neighbors

My advice is to steer clear of apartment or condominium complexes with housing associations. The people "in power" on housing boards actively look for infractions of their by-laws, just to have something to do. If you do grow in an apartment complex, remember: Some residents take an active interest in their surroundings, and it only takes one observant dick to bring you down. Figure out who that might be and assume you're always being watched.

If you're growing in an apartment, you also need to consider who lives directly on the other side of your growroom's walls. If your equipment is noisy, acoustic insulation is an absolute must. Avoid constantly bringing grow gear in and out of your dwelling. Certain trips are unavoidable, so disguise obvious items like bags of soil or bottles of fertilizer.

To maintain a façade of normaley, avoid smoking in or around any house or apartment that has a growroom, unless you're absolutely sure your neighbors can't detect the smell.

Your Digital Footprint

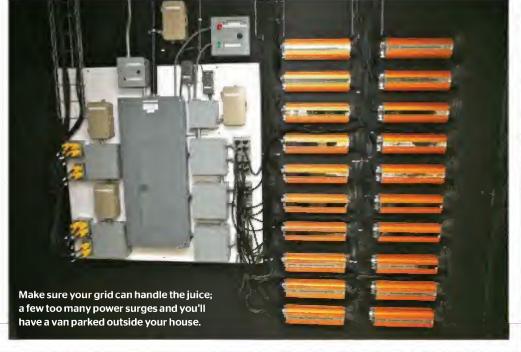
Is it possible that your name has ever surfaced during an investigation of criminal activity involving drugs? Does anyone on your Facebook account have a criminal record involving marijuana? Do you appear in any pictures with current pot growers or dealers, convicted or not? If a close friend has ever been busted, and the cops confiscated that person's phone, you can be sure you're on their radar to some degree. This might not mean the police are actively investigating you, but the more documented associations you have with marijuana, the easier it is for the cops to get a warrant and raid your home if something-or someone-tips them off.



Think About Power

Try, discreetly, to obtain your electric bills from the previous year to gauge how much power you should use. A sudden spike in electrical use can draw suspicion from power companies—and if you're a bit too curious about this information,

you can land on that same watch list. Eliminating the use of other high-consumption electrical appliances—big fridges, washers, dryers, dishwashers, stoves, etc.—will help reduce overall consumption to make more room for powering your grow.





Smart Shopping

Buy your grow gear at diverse locations over an extended period of time—preferably in cash. Most of what you need to grow is available at big-box hardware stores. When you make these purchases, buy other non-grow items, too. Also, drive during rush hour to avoid possible tails. Shopping online can put you on the map, but investigators will need more evidence to charge you or even get a warrant—in most cases, that is.

Intelligent Research

Keep your online activity to a minimum. If you need to ask a grow question, use a computer that has no trace of your name on it, that's never been used to access your personal email or social media—and, most importantly, that's not connected to a router registered under your name. You can attain Internet anonymity using Tor Browser to make searches, but you won't be able to watch videos or download content. Tor hides the information being transmitted, but third parties can still tell you're using it. You can use Tor on public Wi-Fi, but don't create a pattern of going to the same place—and never access your email or social media during a grow-related browsing session.

Running Vents

Plan your ventilation system *before* you cool heat-generating lamps and ballasts or circulate air in your growroom. Avoid using a random, sketchy duct that you've made yourself to expel hot air. Instead, piggyback your vent on an existing one: Vents coming from a dryer, bathroom or kitchen already expel hot and humid air on a semiregular basis.

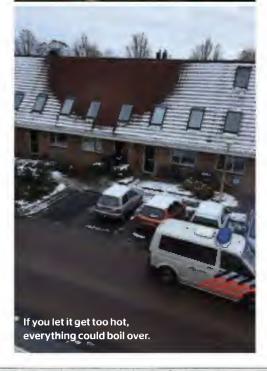
Temperature Troubles

Imagine a quiet suburban neighborhood under a blanket of snow; now imagine one house whose roof is oddly snow-free. Some indoor grows give themselves away during winter by melting the snow on the roof above them. In the summer, a wall or window constantly covered in condensation is just as suspect.

To keep heat under control, stop it at the source. Using cool tubes will focus the airflow right around the bulbs, allowing you to position them closer to your plants. An insulated and separately ventilated housing above the lamps will also stop hot air from pooling at the ceiling.







Insulate Yourself

Seal up any cracks with smoke-proof caulk, and weatherproof your doors to make sure air doesn't leak out. Foam insulation and reflective material will prevent excessive amounts of heat from escaping through the walls and ceiling. Reflective materials like aluminum foil block irradiative heat especially well in closely separated layers.

Look into soundproofing materials if you use noisy appliances like water pumps, air conditioners, generators and extractor fans. In an apartment, any machine should be padded and isolated from the ground or walls so that it doesn't transmit vibrations to unfriendly ears. Invest in fans and pumps engineered to generate less noise if you know that it might be a problem.

Turn Down the Noise

Aside from the noise you might create with fans, humming ballasts and water pumps, there's another kind of noise that could get your garden busted: radio-frequency interference (RFI). Digital ballasts—especially poorly made ones-generate radio waves on frequencies used for AM radio. Long wires act as antennas broadcasting this static up to a mile away. Check out any ham-radio forum; you'll be surprised how notorious pot-garden RFI noise has become among this peculiar crowd, as it interferes with their broadcasting. Cops are getting wise to this phenomenon as well and have started using it to catch growers.

RFI also interferes with Wi-Fi signals—something of which cable providers are well aware. Growers have received visits from pesky cable technicians looking into the source of the radiation. If you have neighbors who are streaming video, RFI will interfere with their entertainment. By keeping it to a minimum, you'll have an easier time staying off the grid.

You can prevent RFI by using quality digital ballasts that use "square wave technology," which helps cut out the interference and also extends the life of the bulb. You should also install "chokes" on the connections with ballasts to stop the long wires from turning into giant antennas.

A special paint exists that can block RFI. It's used primarily to prevent Wi-Fi interference from neighbors, but it can help dampen RFI emitted by growroom electronics. Aluminum foil or other similar reflective materials can also reduce RFI.



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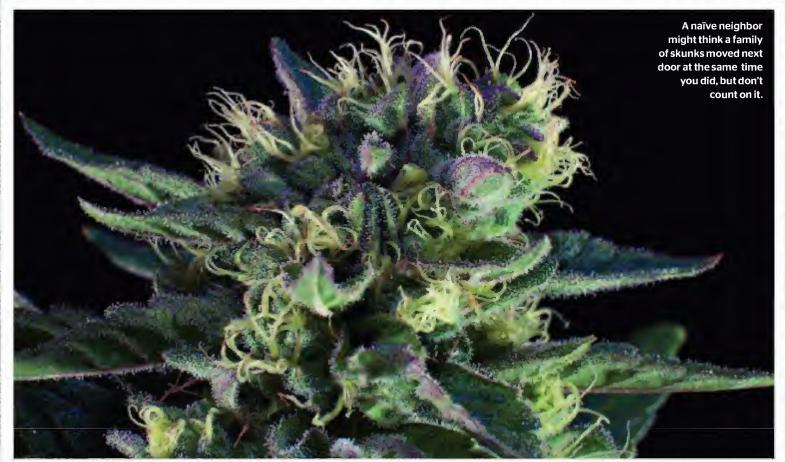






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Suspicious Windows

To truly disguise a window with a grow-room on the other side, make the inside of the room look completely blank. Nosy neighbors or cops should see absolutely nothing, even if they're standing up close. Do this by building an enclosure around the inside of the window and painting it black. Then keep your curtains or blinds completely closed—always! Anyone trying to peek in will see only darkness.

Something Smells Like Skunk

Managing the aroma of flowering and curing buds is paramount. The

occasional scent of marijuana can be hard to pinpoint, but suspicions arise when the smell is strong, if it's present throughout the day, or if it arises on a regular basis. Here are some techniques to eliminate the fragrance of your crop.

Activated-carbon filters are fairly common and effective, but they require a strong fan to push the air through them so that the airflow continues with sufficient pressure down the duct. However, stronger fans make more noise and use more electricity.

UV-light ozone producers will get rid of odors, but they don't generate enough ozone to be used in the exhaust duct, where the air moves rapidly. These lights should be installed in a separate uninhabited room where the air receives treatment before venting outside. The air exposed to the ozone generator shouldn't recirculate through your growroom or anywhere else you'll breathe it in: Ozone can kill a plant's flavor profile and give you emphysema.

Corona-discharge ozone generators are ozone beasts: They generate enough to be used in air ducts, but the high level of ozone means that this system should only be used in larger setups with high volumes of moving air that won't re-enter the growroom. UV lights that eliminate odors but don't generate ozone are a great option for residential houses with central-air heating.

A UV light helps eliminate odors and kills the germs and mold spores it comes into contact with. Having one of these lights installed by a professional contractor shouldn't raise any suspicions: They're a good idea for anyone with allergies to mold or who wants to fight pet odors. If they're used in conjunction with a good furnace filter and a well-insulated ducting system, you shouldn't have any major problems with smell.

Test your odor-proofing system by smoking some flowers in your growroom-to-be and leaving some buds out as well. Then take a stroll outside to see if any odors leak. Definitely run this test a few times to see if your system truly works.

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Tumbling bud in round cylindrical devices destroys trichomes. Trimming wet bud with fast spinning fan blades is just plain stupid. Your product should hang and cure for at least 10 to 14 days in a dark, cool, dry and well ventilated area. The way it's been done for thousands of years. [Fans help in this day and age]

Scissors used to be the only way to trim dry bud with out destroying trichomes. It is very time consuming. Ergo a true set of mechanical scissors for dry bud, but better - scissors don't cut when they spring back. Ultra Trimmer cuts both ways and doesn't stop until you turn it off.

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Surveillance

Cannabis laws in Colorado and Washington require the use of high-quality surveillance and strict protocols throughout the entire cultivation facility to prevent theft or other employee misconduct. Your garden needs the same attention—but don't make it obvious that you have something special to protect. Avoid any visible signs of surveillance equipment and security.

If you operate outside the law, recording your grow might not be the best idea. Growroom footage will help the district attorney's office convict you and may result in additional charges. Unless you're a high-tech expert and know how to secure the image feed so that it doesn't put you in any extra legal jeopardy, don't use cameras.

Depending on your needs, a vast array of security equipment is available. From door and window alarms that make ear-shattering noises, to discreet motion detectors that send a message to your phone when they get tripped, you'll never run out of options for security systems that will either ward off thieves or alert you to unwanted visits from the police when you're not around.



Your "Pretend" Home

Often, growers rent or purchase a property with the intent of growing, but they don't plan to live there. Now you're in a whole different ball game. If you choose a residential suburban neighborhood,

your best bet is to make the place look as if it's inhabited. So pretend to live there by spending time on the premises every day—collecting the mail, mowing the lawn and ensuring that the lights are on when they would normally be.

Make your visits appear to be those of someone who has an intense third-shift work schedule, but also an active social life. That way, you can visit in the morning and spend time during the day going back and forth if necessary.

Even if you visit during the day, make the house look as if someone is sleeping there by setting up lamps on different timers. Time one lamp in the kitchen until 10 p.m., another in the living room until 11 p.m., and a third in the bedroom from 10 p.m. to 12 a.m. You can even set a TV on a timer in the living room for a couple of hours in the evening.

In this situation, keep potentially incriminating evidence to a minimum. Don't leave paraphernalia lying around and, most importantly, don't give police evidence of any extra plants besides the ones you're growing at the time. The cops will *always* grossly overestimate your yield and production value—so don't give them anything more to work with. **





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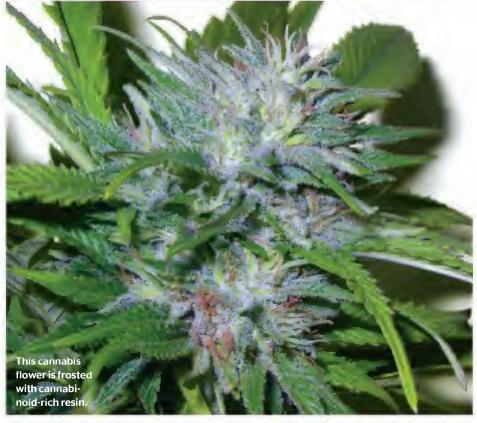


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Innate Qualities of Cannabis

Cannabis is an annual plant, which means it completes its life cycle within one year or less.

Cannabis is also dioecious, having both male and female plants. Mature female flowers contain more of the chemical compounds known as cannabinoids than males.

Cannabis sativa and Cannabis indica are both "photoperiod determinate"—i.e., they require long nights to begin flowering. In Cannabis ruderalis, flowering is not triggered by the light cycle of long nights and short days. C. ruderalis flowers after three to four weeks of growth, regardless of the light schedule.

Life Cycle of Cannabis

Cannabis seeds planted in the spring will grow throughout the summer and flower in the fall. Plants with male flowers produce pollen, which is dispersed by the wind; plants with female flowers will produce seeds when fertilized. The annual cycle starts all over again when the new generation of seeds sprouts the following year. In nature, cannabis goes through distinct growth stages: seedling, vegetative, pre-flower and flower.

Seeds and Seedlings

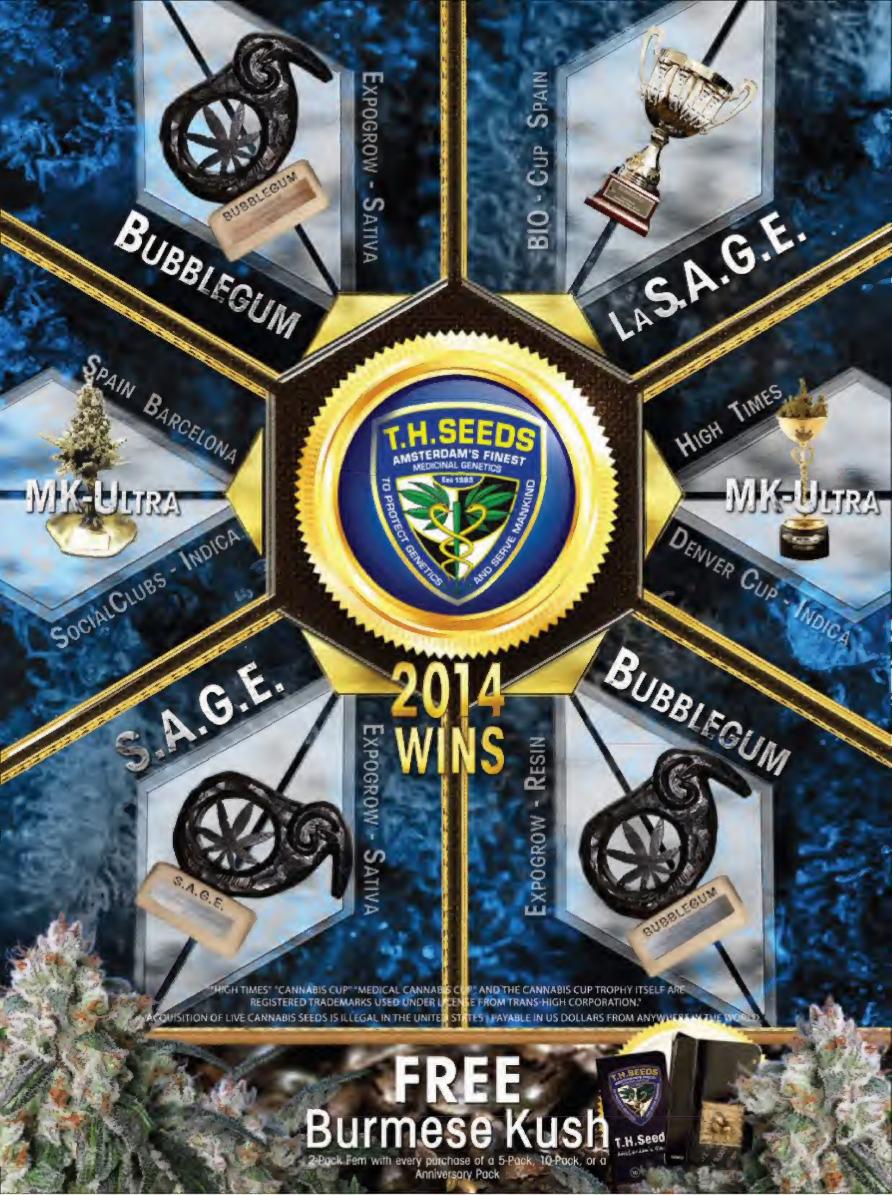
Healthy seeds germinate three to seven days after absorbing water from the medium and transform into little sprouts. The seedling stage lasts about a month. During this first growth phase, seeds germinate or sprout, establish a root system, grow a stem, and produce leaves to harvest sunlight and convert it into usable energy—a process known as photosynthesis.

Germination

During germination, moisture, heat and oxygen activate the embryo within the durable outer coating of the seed. The embryo expands, nourished by a supply of food stored within the seed. Soon, the seed's coating splits, a white taproot grows downward, and a sprout's cotyledons (seed leaves) push upward in search of light.

Seedling Growth

The primary root (taproot) grows downward due to gravity and branches out, similar to the way the stem branches up and out aboveground. These secondary branching roots are called lateral roots, and they produce tiny rootlets that draw in water and inorganic salts—the chemical nutrients required to sustain life. Roots also serve to anchor the plant in the soil or other medium and provide support for the growth above. Seedlings should receive 16 to 24 hours of light to maintain vegetative growth. The seedling-growth stage usually lasts four to six weeks, and most varieties will continue on to vegetative growth as long as the plants receive at least 16 hours of light every 24 hours.



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Vegetative Growth

Cannabis will stay in the vegetativegrowth stage as long as it receives a minimum of 16 hours of light daily. As the plant grows, its roots continue to fill the medium below the soil line. Cells in the root tips continue to divide and push farther and farther into the soil in search of more water and nutrients. Lateral root branches sprout, perpendicular to the primary roots, and then form thin root hairs that are also designed to harvest water and nutrients from the soil. If the soil dries out completely, these frail root hairs will desiccate and die. They are very delicate and are easily damaged or torn by klutzy hands if exposed or moved roughly. Extreme care must be exercised during transplanting. A strong, healthy root system is essential for optimum growth.

Like the roots, the terminal growth shoot at the top of the plant also has cells that divide and multiply at its tip, called the meristem. These cells give rise to new auxiliary buds, which themselves become lateral leaves and shoots. The central, or apical, bud carries growth upward; side, or lateral, buds turn into branches or leaves. The vascular system, located within the main stem, transmits water and nutrients from the root system to the growing buds, leaves and flowers, where sugars are produced via photosynthesis and then redistributed throughout the plant. This fluid flow takes place—

in specialized tissues called xylem and phloem; xylem brings nutrients and water to the sites of photosynthesis in the leaves, and phloem brings the resulting sugars to parts of the plant that do not undergo photosynthesis.

The stem also supports the plant with cellulose and lignin, located within the cell walls and structures along the stem. Outdoors, rain and wind push plants around, causing micro-tears in these tissues, which are repaired by the deposition of cellulose and lignin. These tissues together provide strength and make the stem rigid and strong.

Indoors and in greenhouses, with no natural wind or rain present, the cellulose and lignin production is often lower, so plants develop weak stems and may need to be staked up later, especially during flowering. To help build strong stems, be sure to have adequate air movement in the growroom or greenhouse environment.

Once green tissues are present in the seedling, the plant starts to manufacture food (carbohydrates) and produce energy from the sunlight and nutrients in the soil. Chlorophyll is the substance that gives plants their green color, and it is found in cellular structures called chloroplasts. Inside the chloroplasts is where light energy, carbon dioxide (CO₂) taken from the air, and water and nutrients from the soil are converted into carbohydrates and oxygen. This process releases

usable energy and creates starches or sugars that are later used in the production of plant tissues and cellular components.

Tiny breathing pores called stomata are located on the underside of the leaf. Stomata are the entry point of CO_2 into the plant, where it is then used in photosynthesis. The stomata open and close to regulate the flow of moisture and oxygen from the leaf, both of which are waste products of photosynthesis. The stomata are very important to the plant's overall health and function.



Pre-Flowering

Cannabis grown from seed typically begins to show early development of floral bud structures commonly known as pre-flowers. The vast majority of varieties begin to produce these immature sexual organs by the fourth or fifth week of vegetative growth. In some varietals, preflowers can be seen as early as the fourth node; however, they generally appear between the fourth and sixth node from the bottom of the plant. Use pre-flowers to identify the gender of the plants and separate the females for flower production. Female flowers are cultivated for their high cannabinoid content and are therefore prized. Male plants have lower levels of cannabinoids (THC, CBD, CBN, etc.) and are not typically kept by cannabis cultivators. Male plants are normally removed and destroyed by growers, but can also be maintained and evaluated as potential breeding stock.

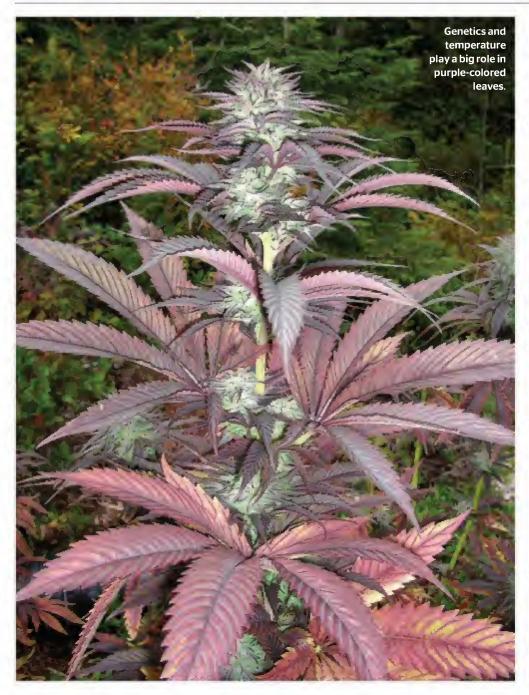
Indoor plants grown from seed are most often left in the vegetative-growth stage for four to six weeks, or until they are a minimum of 12 to 18 inches (30 to 45 cm) tall, before being induced to flower. Smaller plants can be induced to flower, but this practice is typically not recommended for plants grown from seed and is more practical for crops grown from clones. The premature flowering of young plants from seed can cause sexual instability (intersex expression) in some varieties.

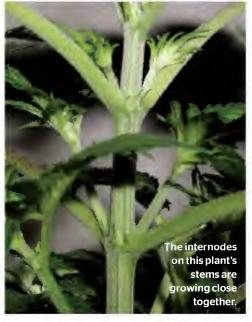














Flowering

Cannabis enters the flowering stage in the late summer and early fall. As the nights become longer and days shorter, plants are signaled that their annual life cycle is beginning to come to an end, and the flowering stage begins.

Left unpollinated, female flowers develop without seeds, commonly known as "sinsemilla" (from the Spanish sin semilla—literally, "without seed"). Unfertilized female plants continue to produce flowers and become increasingly covered in resinous, glandular trichomes, which produce the essential oils (terpenes) that give cannabis its unique smells, in addition to the medicinal compounds known as cannabinoids. Trichomes produce numerous secondary plant metabolites, and recent studies show that some of the molecules produced in cannabis trichomes belong to families of compounds

Left unpollinated, female flowers develop without seeds, commonly known as "sinsemilla" (from the Spanish sin semilla—literally "without seed").

with proven antifungal, antimicrobial and antibiotic properties. Genes that provide resistance to dehydration are also present, and in many species trichomes are known to inhibit insect movement. All of these factors support the hypothesized role of trichomes and their by-products: to provide protection from insects, fungi, UV light and so on that might damage the developing seed within the female flower during gestation.

After weeks of heavy flower production, cannabinoid content and other secondary metabolite production peaks in the unfertilized sinsemilla flowers. This is the ideal moment for harvest: No new flowers are being produced, and the unseeded floral clusters are at their maximum coverage by glandular trichomes rich in cannabinoids and other essential oils.

Indoors, flowering can be induced in most commercial varieties of cannabis by providing 12 hours of uninterrupted darkness and 12 hours of light every 24 hours. Plants that developed in tropical regions often start flowering when given 12-hour days and nights, but flowering can continue for up to 20 weeks. Some growers who cultivate equatorial *sativa* varieties will increase the period of darkness to 13 hours and beyond, in an attempt to mimic the natural light cycle in the tropics.









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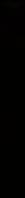


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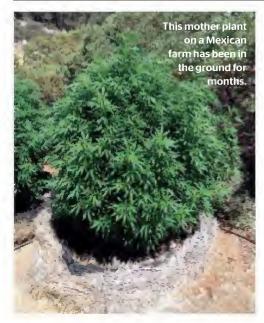
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Mother Plants and Clones

Vigorous, healthy female plants known to produce high-quality flowers with excellent cannabinoid profiles make the best mother plants, although any plant deemed desirable can be made into a mother, or donor, plant. Mother plants are given 18 to 24 hours of light daily to ensure they stay in the vegetativegrowth stage. For vegetative reproduction, stem cuttings of shoots or branches are taken from mother plants and placed



in a growth medium to establish roots. The rooted stem cuttings are often called "clones," since the new plants share the exact genetic code of the mother plant and thus will grow identically when given the same environment. Cultivating several vigorous, healthy, insect-free mother plants is the key to having a consistent supply of all-female clones.

A single mother plant can supply a garden with hundreds of clones in a few short months. Indoors, clones can

be induced to flower as early as 6 to 12 inches (15 to 30 cm) tall, or can be grown up to 3 feet (90 cm) or taller before being induced to flower. The identical clones are moved into the flowering room as soon as the previous crop is harvested. Outdoor gardeners grow clones indoors until they are about 2 feet tall (60 cm) before moving them outdoors or to a greenhouse for planting.

Clones take 10 to 20 days to grow a strong, healthy root system, but can begin to show roots in as little as six days. Clones are given 18 to 24 hours of light so they stay in the vegetative-growth stage, and once the root system is established, clones are transplanted into larger containers. Indoors, clones grow for an additional one to four weeks or more in the vegetative-growth stage before being induced to flower. Outdoors, clones are transplanted into large containers or Mother Earth, and they stay in the vegetative-growth stage until nights grow long in the late summer, which induces them to flower.

Adapted from The Cannabis Encyclopedia by Jorge Cervantes, \$50 (softcover), \$70 (hardcover). Find it at Amazon.com or by visiting Jorge's website, Marijuana Growing.com.



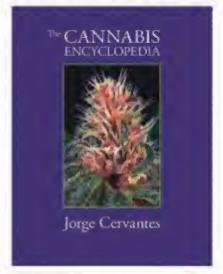
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The Key to Growing More Efficiently



Cannabis cultivators have known for decades that regulating temperature is crucial to bigger yields and better buds, but most growers never take a look at the temperature that matters most. *By Mitch Shenassa*

An Overture to Temperature

Leaf-surface temperature (LST) reflects the actual "body temperature" of the plant, based on its absorption and usage of light and its own temperature-regulating mechanisms.

By using lighting that minimizes or eliminates infrared and other wasted light, you can achieve the perfect leafsurface temperature to produce maximum yields while running less power and minimizing the need for cooling.

Barefoot in the Summertime

To understand LST, think about walking barefoot on a hot summer day. Imagine the air is a balmy 88°F with the sun shining. The cream-colored sidewalk is warm to the soles of your feet, but when step onto blacktop, it feels like you're trying to walk across a frying pan.

The difference is the surface temperature of the sidewalk versus the asphalt.

Though the air temperature is the same,

and the source of light and heat—the sun—doesn't change, the surfaces of the sidewalk and asphalt are different: While the sidewalk is light-colored, the asphalt is dark.

Light is reflected by colors closer to white. That's why they appear lighter to our eyes—when we see more reflected photons, our brains register the color as lighter. By contrast, dark colors *absorb* photons: Energy that was once light is absorbed and becomes heat, eventually reaching the temperatures that send you scampering off the asphalt.

Ambience Isn't Everything

If you take a thermometer and measure the temperature in your garden, you're looking at the ambient air temperature (AAT) or room temperature. AAT plays a role in—but isn't usually the same as—LST, because the leaf surface can hold more heat than the air.

Solid objects like plant leaves conduct

heat very well—unlike air, where the atoms are too dispersed to transfer anything efficiently.

To conveniently measure your plants' LST, you can use a forward-looking infrared (FLIR) camera. This equipment can get expensive, but an iPhone version is available for around \$350. For the hobbyist, a standard hand-held infrared thermometer or temperature gun is a more cost-effective way to get a rough idea of the LST.

FLIR images show how much the temperature can vary on a single leaf—often by as much as 10°F for cannabis. It can be easy to misjudge the overall temperature with just a few measurements from a temperature gun, but you can get a rough idea by collecting five or six readings from multiple spots on at least seven or eight leaves. The more readings you take from different areas, the more accurate a total picture you'll get of the LST on your plants.

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Plants use their leaves as evaporative cooling systems, similar to how humans use sweat: They transpire water to the leaf surfaces, and this water absorbs some heat energy and then expends it in the process of turning from a liquid to a gas.

Don't Sweat It

Plants use their leaves as evaporative cooling systems, similar to how humans use sweat: They transpire water to the leaf surfaces, and this water absorbs heat energy and then expends it in the process of turning from a liquid to a gas. However, in very humid environments where the air can't hold any more moisture, the whole process slows down, allowing temperatures to go unchecked.

You can picture this effect on your own body if you imagine a steam sauna. Steam saunas don't have to be as hot as dry saunas, because they don't need to counter the cooling effect of evaporating sweat. Upon contact with the heat of either type of sauna, your body starts sweating almost immediately. But in wet saunas, the humid air can't hold any more moisture, so you keep heating up, and the sweat drips in puddles instead of evaporating.

The same thing happens to a plant's leaves in a hot, humid room: The water transpires to the surface, but if the room is too humid, it won't evaporate and cool the plant. So always be sure to consider your total environment when gauging LST.

Turning Light into Height

Plants use light to power photosynthesis, the internal chemical process they employ to make their own food (sugar) out of air and water.

The plants' chloroplasts actually harness the energy we see as light to do the work: They use it to excite the electrons orbiting atoms, causing chemical reactions that build long sugar molecules from $\rm CO_2$ and $\rm H_2O$. The sugar stores the remaining captured light as chemical energy that the plant uses to fuel its growth.

Since a plant's LST is raised by any light that it *can't* use for photosynthesis, an optimized color spectrum results in a lot less wasted light, heat and electricity in your garden.

Before and After ROY G. BIV

To understand the visible-light spectrum (popularly summarized with the acronym "ROY G. BIV", for the sequence of red, orange, yellow, green, blue, indigo and violet light), think of how a rainbow works: The angle of light hitting rain makes the light slow down unevenly, causing it to bend. The fastest, most energetic light makes the shortest trip,

creating the innermost violet band, and the slowest, least energetic light makes the longest trip, appearing as the red outer band. Those colors are the boundary of the visible spectrum—but in that rainbow, there's still light that our eyes can't see as color.

If you look closely at the edges of the rainbow, you'll see a distortion or shimmer. This is the very edge of the visible and invisible spectrum. The edge inside the violet is the range we call *ultraviolet*. It's the light we wear sunblock to protect ourselves from, because it's extremely energetic—too strong for human or plant cells to use normally. The extra energy has to be absorbed by special dark pigments, which is why humans get suntanned, and cannabis produces its own special dark pigments called *anthocyanins* (AN-tho-SIGH-ah-nins), as well as THC and CBD.

The edge outside the red is what we call *infrared*. It's a less energetic type of light that, even when it's present, appears dark to us because human eyes can't see it. Night-vision optics use special technology to supplement our ability to see this less energetic light.

The infrared range is made up of two subranges: near infrared and true infrared. While the near-infrared range (700 to 800 nanometers) is important for hormone signaling and can actually lend a hand in photosynthesis that's a little short on energy, true infrared is too weak to do any work in the plant and settles in as heat.

Infrared Light: Too Weak for Photosynthesis

Ripping air and water apart and welding them back together as sugar is hard work that takes a lot of energy for the plant to pull off. That's why science textbooks often describe the leaf—and especially its chloroplasts—as a factory.

Think of the photons (light particles) that are used by the leaf as workers in a factory: The excited violets are on one end, ripping apart chemical chains alongside the indigos and blues, while the calmer reds weld the broken links into sugars alongside the oranges and vellows. Different photons work at different rates, too. The blues and reds absorb best into the plants—they show up to work early and get going immediately while the yellows and greens work less efficiently, showing up late and slacking off on the job. What this means for lighting your garden is that by choosing lights with a plant-optimized spectrum, you're



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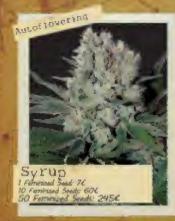
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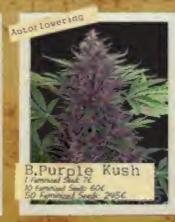
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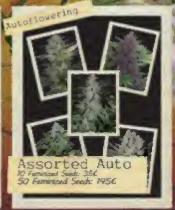












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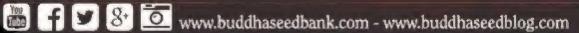
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not wasting any space in your these leafy energy factories with "lazy" types of light.

The laziest type of light for photosynthesis is infrared light. The infrared photons show up to the factory with the rest of the workers, but they're too weak and slow to do any work—they don't have enough energy to be useful, so they just sit around being warm bodies.

You can imagine how that plays out: On chilly mornings, the infrareds make the factory warm enough for everyone to get some work done, but on hot days, they make the place stifling, and the whole factory has to slow down to keep from overheating. The process works the same way in the leaf: As long as the leaf surface is at an optimal temperature, the work of plant growth goes great. But if it gets too cold, the work slows down and eventually stops—and if things get too hot, we see the familiar symptoms of heat exhaustion.

Of Lights and LST

LST has been discussed by expert cannabis growers for some time, especially with regard to traditional infrared-producing high-intensity discharge (HID) lights. Black Dog LED wanted to examine this phenomenon under their



"plant-optimized" LED panels, which are designed to produce no infrared light. They wanted to see how much the type of light could affect LST, so they compared a 1,000-watt metal halide (MH) light and a 1,000w high-pressure sodium (HPS) light with their 750w LED unit. They also compared a 324w, six-bulb 4-foot T5 fluorescent rack with their 340w LED unit, and a 200w daylight-spectrum compact-fluorescent light (CFL) and a 240w white LED with their plant-optimized 240w 15-color LED panel.

Using a FLIR camera, they were able to capture precise surface temperatures on the leaves under different lights in otherwise identical environments—same plants, same ambient air temperature, same humidity.

Grow Lights: Head to Head

In otherwise identical environments, the same plant displayed drastically different LSTs under different types of common grow lights.

In the lightweight 200- to 240w category, in a 75°F growroom at 50% relative humidity, the wasted light produced by the CFL and white-spectrum LED raised leaf-surface temperature by more than 4°F. In the middleweight 340w range, the leaves under the plant-optimized LED panel came in almost 5°F cooler than the T5 fluorescent rack. Finally, in a production environment, the leaves under the 750w LED came in 5.5°F cooler than they did under the classic 1,000w MH light, and almost 7.5°F cooler than under the HPS.

These differences in leaf-surface temperature are the result of the light that each bulb is producing—including wasted light that the plant can't use and that ultimately becomes heat.



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Some Like It Hot

If we think in terms of LST instead of AAT, leaf-surface temps instead of room temp, we can evolve our understanding of growing with HID bulbs. While we often discuss the typical best practice of keeping the growroom at 72°F to 75°F with the lights on, we're discussing the ambient air temperature, not the leaf-surface temperature that actually matters most for the plants' health.

Instead of thinking about AAT, we need to think about LST. Using the numbers from Black Dog's study, we know that HID lights raise the LST to somewhere between 85°F and 89°F. So if you have a strain that thrives in a room at 75F°, remember that the leaves are actually at their optimum temperature of around 87°F, regardless of the AAT.

Why does this matter? Different kinds of grow light will add different amounts of infrared heat to your plants' leaves. If you know that your plant thrives at a specific temperature under one type of bulb, you may have to raise or lower your ambient air temperature to adjust it for a bulb that produces more or less infrared light.

Grow for Less

While most growers measure the AAT in their growroom, the LST is more important because it directly affects how the plant grows. Different species of plants have different optimal LST ranges in which they thrive, and different strains of cannabis may prefer different bands within their range. When we discuss growroom temperature, though, we don't

LST will allow you to design your garden to function more optimally.

usually account for the type of light being used in the garden—and while it seldom makes a difference in ambient temperature, it can have a significant impact on the actual body temperature of your plants.

The LST is affected by multiple factors. The infrared light produced by HID bulbs alone can increase LST by as much as 18%, while excess humidity can prevent the plant from cooling itself through transpiration.

Taking these factors into account when designing your garden—and

measuring the proper temperature during your cycle—will let you optimize climate efficiency. For example, gardeners focused on maintaining AAT may be running their rooms too cool for their plants' leaves if they use lighting that doesn't produce infrared.

On the other hand, using lights that don't produce infrared can allow you to run your garden almost 10°F warmer, which can mean huge savings on the energy and gear you'd use to cool your plants. In some climates, where seasonal extremes have an impact regardless of air conditioning, removing 10°F of heat from the leaves by switching to plant-optimized lighting can make the difference between shutting down for the season and squeezing in an extra harvest. While the LST is less convenient to measure than AAT, it more accurately reflects the body temperature of the plant. Understanding how environmental factors, from light spectrum to humidity, can alter LST will allow you to design your garden to function more optimally and efficiently in your space, and growers can make meaningful comparisons of the ideal temperature for the same strain grown under different lighting conditions. *



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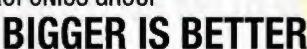






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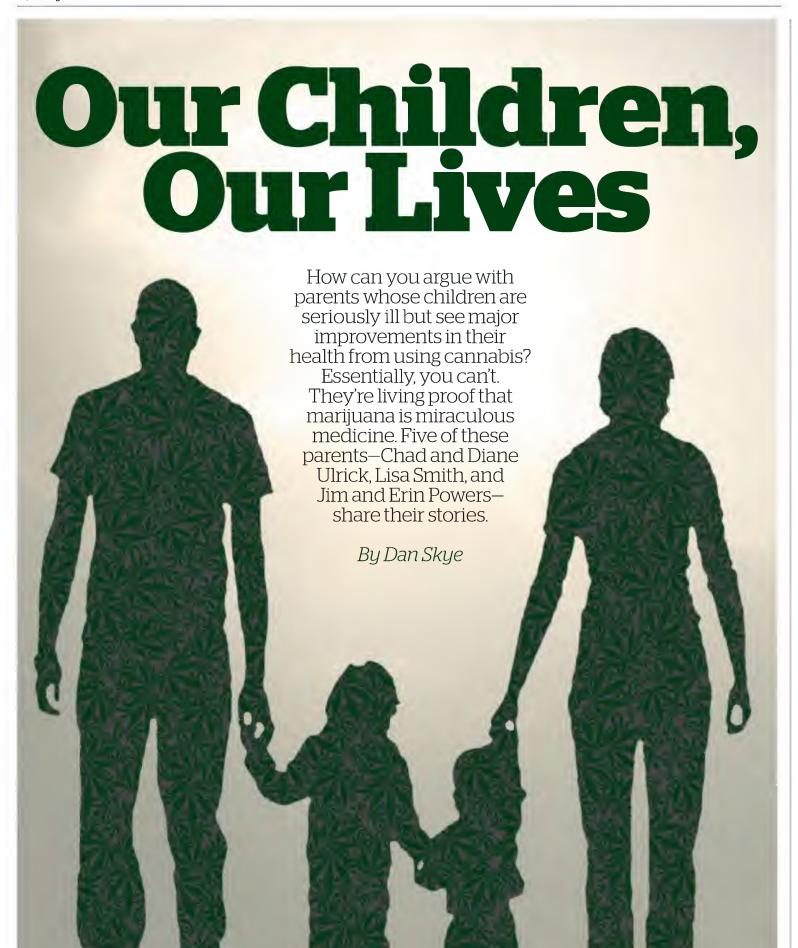
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100 our Children, Our Lives High Times July 2015

Tell us about your children.

DIANE ULRICK: Our son Colin is almost 11 and has Smith-Magenis syndrome. It's a rare genetic disorder. He has seizures and explosive meltdowns.

CHAD ULRICK: The doctors say they ran out of medicine to give him—they tried every single prescription that was available.

DIANE ULRICK: And psychiatrists refuse to see him because he can't say what's wrong with him. They won't see him to treat his meltdowns and these anxieties. We were like, "What are we supposed to do with him?"

His medications stopped working, and the serologists suggested medical marijuana for his behavior. Colin started using medical marijuana at age nine, so it's been almost two years.

We use oil. Sometimes we put it in capsules. We've learned that it works better by just putting it on sour cream. And Colin started to show some improvements. The seizures, the behavior—it fixed things we never would have thought it could. Now he can focus; he can sit down and listen to the teacher and actually learn more signs, learn more speech.

CHAD ULRICK: His teacher knows all about it, too. His teacher is all for it and loves it and sees the effect that it's had.

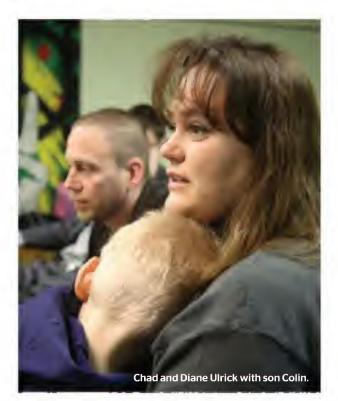
DIANE ULRICK: It's our life and his. We're afraid that we'll have to put him in a home if he can't get his medicine. This is our medicine; it's his medicine. We feel like we're criminals, and we shouldn't be criminals for trying to treat our son when the psychiatrists, the doctors, won't help anymore. It's up to us—and Michigan—to help.

JIM POWERS: When our son Ryan was three, he developed something called minimal change disease. What occurred is, he started swelling up. We took him to the doctor repeatedly. They kept telling us it was allergies, but the swelling continued and worsened over the weeks.

We took him to a urologist who did tests and told us that we needed to take him immediately to an emergency room. We did, and they ran some tests and said they believed he had something called nephritic syndrome.

Kidneys filter out tons of different substances. One of the substances that they're supposed to keep in your blood is metabolized protein, called albumen. Ryan's kidneys were causing him to leak metabolized protein into his urine, and the protein levels were incredibly low in his blood. That's what caused this insane swelling.

The hospital we went to didn't have specialists, so we went to the Children's Hospital of Michigan in Detroit. After some more tests, they said it was minimal change disease, a chronic autoimmune disease. There's no root cause and there's no known cure.



"Now he can focus; he can sit down and listen to the teacher and actually learn more signs, learn more speech."

They put Ryan on a very high course of steroids and told us not to worry, that he'd be a normal kid. He went into remission. But when we started weaning him off the steroids, he immediately relapsed. We repeated this cycle several times; each time, the result was the same. So he earned a couple more labels: "steroid-dependent" and "frequently relapsing."

Ryan was three at the time. The specialists told us we needed to try auto-immune suppressants and gave us two options. One was a drug called CellCept SangCya, which they give transplant patients to suppress their immune systems. Another was Cytoxan, which is chemotherapy.

Obviously, we tried the SangCya first,

but he failed that therapy. The doctors then said we needed to immediately try the Cytoxan. After some debate, we tried that, and he failed that therapy as well. All of this was while he's on this very high dose of steroids, which were doing horrible things to him.

The Cytoxan can only be taken once in his lifetime. There's no taking it twice, there's no extended course—it's a one-time shot. We felt we were running out of options, so we decided to go with cannabis oil.

A couple of things happened. The first was that Ryan's demeanor changed immediately. Anyone who's been on a very high dose of steroids will tell you that it's horrible—it screws with your emotions like nothing else. Ryan went from being a happy three-year-old to being a little terror, to the point that he didn't even know why.

Erin Powers: He gained 10 pounds just from steroid weight. When he was with friends, he'd wobble after them, trying his best to have some semblance of what he had before.

The cannabis oil just gave him so much more freedom. It helped him so much—his moods changed, he wasn't nearly as upset. We give it to him in an olive-oil-and-coconut suspension. He takes it in a syrup, like his other medications—one right after another. It immediately improved his mood and his attitude. Within a week or

two, Ryan went back into remission. We started weaning him off steroids, and this time he didn't relapse. He was still on his pharmaceuticals; we just added the cannabis oil to them. I believe he was in remission for 234 days. The longest-running remission before that was 14 days.

With any autoimmune disease, any time the immune system becomes what they call "active but challenged," it can cause a relapse. Ryan's had relapses from time to time, but he's well over 230 days again, and at this point he's completely off steroids as of this past week. This is brand new: He's never been off steroids completely since he was diagnosed. Now he is. We credit a lot of that to diet, and we also credit a lot of that to cannabis oil.



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JIM POWERS: Ryan is now six. We've seriously been using it for two years.

LISA SMITH: My son Noah is five. He has Dravet syndrome and autism. He was developing normally up until he received his nine-month vaccinations. Within 12 hours, he was seizing. We took him to the hospital. With previous vaccinations, he never had a fever, never had reactions. Two weeks later, he had another seizure. We went through a period of trying to get him diagnosed. Once we finally did get some genetic testing done, he came back positive for selective mutism [a psychiatric disorder].



"There are so many questions that we want resolved. We want to continue our lives and not worry and not feel like we have to hide anything we do."

Noah has all types of seizures. He has absence seizures, grand mals, petit mals, drop seizures—he has seizures that don't register on the EEG equipment. I saw Charlotte Figi's story [the child whose epileptic seizures were reduced by using CBD-rich oil], and I'd read about parents using cannabis for their children. Being a single mom, I need a little help, because I'm going to find myself in a position where I can't handle him anymore, and I'm going to be faced with the decision of possibly having to put him in a home. I just couldn't find myself doing that.

Noah was having a hard time of it with pharmaceuticals. He ate, but nothing was controlling his seizures. He had failed just about every anti-epileptic medication there was, and the behavior meds were no longer working. He was

just a mess. He would bang his head on the file cabinet, on the wall—tantrums, hitting, punching, pulling, kicking, the whole nine yards. Because of his autism, he also has developmental issues.

We tried everything else medically possible that we could think of before we tried cannabis. Now that he's using it, I've been able to wean him off all of his behavior meds. And he's actually three-quarters of the way weaned off all of his seizure meds.

Noah's five now, and he started using cannabis at three and a half. We give him the cannabis oil in a coconut-oil base. He takes it right out of the syringe, just like

every other medication that he's ever taken. Sometimes I use raw cannabis juice and freeze it into ice cubes. One or two a day does help with whatever he's drinking.

In the past, when Noah had a bad seizure, he would lose skills and have to regain everything. But with cannabis, he didn't lose any skills; there wasn't any regression whatsoever. He's actually progressed and goes to ABA [applied behavior analysis] every day for his autism. He's been making all of his goals. His teachers know that he's

been on medical marijuana. We've had nothing but support from everybody. His own neurologist has been very supportive.

What has your experience been with mainstream medicine?

DIANE ULRICK: The neurologist, who had other children he was working with—he's the one that suggested it. He said, "Go to a compassion center." It took us about a year to think it over and investigate it, because we didn't want to give our son something harmful. Right before we decided to do it, um, I asked the neurologist if he could please find some other kind of medication for Colin. And he said, "I told you what to do."

Erin Powers: With Ryan, when we were at the Children's Hospital, I was

talking to his nurse and brought up something about chemo—that my husband had been researching medical marijuana. She instantly cut me off and asked, "Well, you're not giving it to him, are you?" So, of course, we were like, "No, no. We're not doing that."

JIM POWERS: We've made a lot of progress in the last three years. Ryan is a perfect example: I called at least 60 doctors [to get him certified for medical cannabis]. I could only find two of them—after calling 60 doctors in the state of Michigan. But now doctors are certifying children. Every parent who has a child with a chronic illness wants to try this. We've got neurologists and pediatric neurologists who are signing recommendations; we've got pediatric oncologists who are signing recommendations. This is all brand new. It's a huge first step.

Are they monitoring its efficacy? Not really, other than anecdotally. But what we need is actual charted evidence to start getting some of these major hospital systems on board.

LISA SMITH: I would love to hand them a packet and tell them that this is exactly what we're doing [to treat my son]. But that also opens you up: What if they're not okay with it? I had to go to the emergency room. Do we even let them know that we give Noah cannabis oil?

I'm afraid of getting that knock on the door. I'm not very afraid of the medical professionals calling—they're all working with us. But neighbors who don't know exactly what's going on, they might think, "Something strange is going on over there, because Noah used to be like this and now he's like that." Word of mouth, things like that... I would have a hard time because of my own circumstances, alone. I'm a single mom and disabled, so most of the time, I have to do everything by myself.

JIM POWERS: At the end of the day, I'm not going to live in fear. The more we make our cases with factual evidence, the less people will be concerned about it. My wife and I have been relatively vocal and in the public eye in the last year. I feel that it's really protected us—because I truly believe that most people understand and can sympathize with the fact that we have very sick children, and we are doing everything we can in our power to help them.

Most folks in law enforcement have kids. Most of them are supportive,

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frankly. Though they'll never go on the record as being supportive, they are.

Erin Powers: Somebody's got to do it. I mean, everybody wants to pack up and move [to a legal state]. But what about the folks who can't move? We love Michigan and we want to stay in Michigan, and the only way we can is to fight for ourselves.

The more you say things, the more you hope people will understand. The law issue—there are so many questions that we want resolved. We want to continue our lives and not worry and not feel like we have to hide anything we do.

JIM Powers: We've formed Parents for Compassion, a loosely assembled group of parents. We try to generate activity when there's any legislation that would benefit our families. We talk to our lawmakers, we show up at hearings... but when all is said and done, there will be more issues. There are parents who aren't speaking up right now; they want to try cannabis, but they're scared. We'd like to be in a place where they can get information, keep the network going, be there to answer a couple of questions, make the process a little less scary.



Describe your feelings about cannabis now.

DIANE ULRICK: A lifesaver. When I grew up, it was the enemy. It was fatal to do drugs. Now I know it's a lifesaver.

CHAD ULRICK: I can't believe she's actually changed her mind—she sees it that way now. When I met her, it would have been totally forbidden.

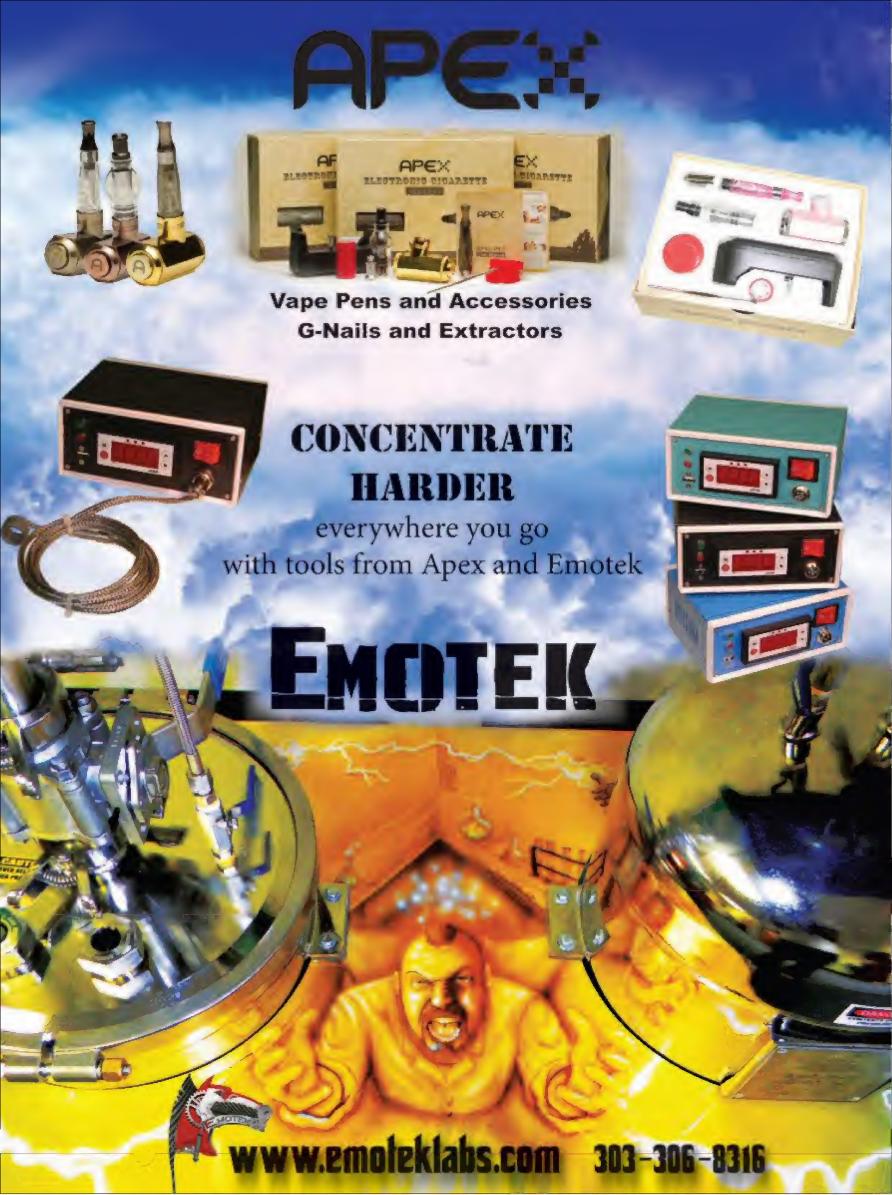
Jim Powers: I grew up in a not terribly liberal household, but there was never any ill intent toward cannabis. This has just furthered my belief in natural medicine, and that cannabis is one piece of that. I'm just grateful that we have it as an option, because I'm not sure what we would do if we didn't.

LISA SMITH: What other plant could do this at this point? It's not five or 10 different medicines; it's just one plant. That in itself is absolutely amazing.

Erin Powers: Well, I grew up around cannabis—aunts, uncles, cousins, you name it—but it was recreational use. I never really took in how valuable a plant it could be until my son ran out of options. Then I started looking for alternative therapies—because if I didn't find something, I was going to lose him. If I didn't lose him to Child Protective Services, I was going to lose him permanently: His life would be taken from me. That is my fear still, because of his condition. So cannabis has been a lifesaver, definitely. **

Rich Thompson moderated this roundtable discussion.





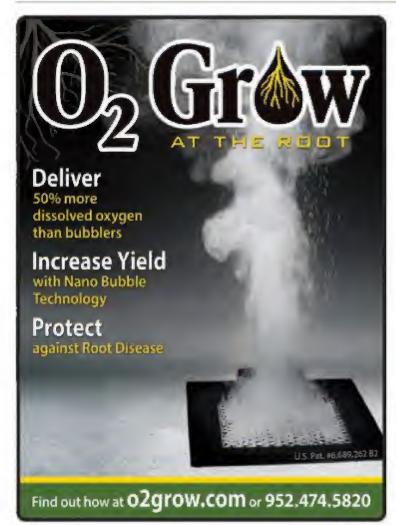


"Our mission is to develop products that allow our customers to grow the best cannabis in the world...
...anything less is unacceptable."



Julye 2015 **High Times**









July 2015 **High Times** The High Times Interview **109**



NAYA SCHENWAR

THE HIGH TIMES INTERVIEW

HE UNITED STATES HAS
EARNED THE TITLE "PRISON
NATION," WITH MORE
PRISONS AND MORE INMATES
THAN ANY OTHER COUNTRY
IN THE WORLD. AND, AS WE ALL KNOW,
THE WAR ON DRUGS HAS PLAYED A MAJOR
ROLE IN FUELING THIS TRAGEDY.

MAYA SCHENWAR WRITES IN LOCKED UP, LOCKED OUT: WHY PRISON DOESN'T WORK AND HOW WE CAN DO BETTER:
"PRISON'S ROLE IN SOCIETY, THE LOGIC GOES, IS TO TOSS AWAY THE BAD EGGS SO THEY CAN'T POISON US—SO WE DON'T HAVE TO SEE THEM. WITH THOSE EGGS CLEARED, WE SEAMLESSLY CLOSE UP THE GAPS AND CARRY ON, CLEAN AND WHOLE."

HER BOOK IS AN IMPRESSIVE, HARD-HITTING INDICTMENT OF OUR PENAL SYSTEM, ESPECIALLY IN TERMS OF THE DAMAGE IT INFLICTS ON PEOPLE WHO SERVE TIME, OFTEN FOR NONVIOLENT OFFENSES. ARE NEW MODELS OF DOING JUSTICE POSSIBLE? SCHENWAR THINKS SO.

Your younger sister Kayla, who spent time in prison, serves as the anchor of your book. How is she doing?

She's doing really well. This time, when she got out, she was given a chance to have some resources-I don't even want to say to "rehabilitate," but to reconnect. She was released into a less punitive environment. She was released into a women's treatment center that focused on connection with her baby, her family, with people in the community. It's been difficult. Finding a job is extremely difficult working through the barriers not only to employment, but to housing and educational opportunities, certainly. My sister is lucky in that she's been able to maintain connections with us, her family.



Was her incarceration drug-related?

Yes. Everything that happened revolved around her addiction. Not because an addiction prompts criminal acts—but because heroin's illegal, and because a heroin habit is illegal, she had to commit certain crimes to keep herself out of the view of society. The last thing that she was incarcerated for was theft: She stole a bottle of perfume from a drugstore.

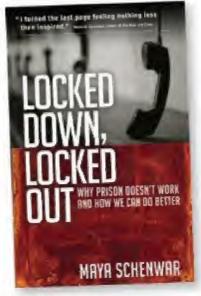
You come from a solid middleclass family. How did she fall away?

Early on in high school, she got into some trouble—the kind of thing that a lot of people fall into during high school. She was arrested for drug possession and ended up going to juvenile detention. For most people who go to juvenile detention, the path isn't good. It takes them off the path of finishing high school, finding a solid job, getting a college education, and it significantly increases their chances of going to prison as an adult.

Did her situation motivate you to write about America's prison problem?

I actually started writing about this topic before she went to juvenile detention. I had a friend who was deported: While detained, he was kept in the county jail. I'd never visited a jail or a prison before. It just struck me very hard. It was his mom and me and another friend on one side of this Plexiglas, and him on the other. He tried to kind of hug his mom. I remember everyone was crying. That's what I came away with: He can't hug his mom. Is that good for anyone? My book covers a lot of things, but it's about the way that prison breaks down the bonds between people.

America's prison population has soared. Is this a politically



"Incarceration became used more and more as a form of racial and social control. The Drug War has played out along those lines."

driven phenomenon?

Crime has always been an issue that politicians can win with, while prison reform is an issue that you couldn't even campaign on, because the people who are most affected are disenfranchised. People who are in prison are obviously disenfranchisedpeople getting out very often can't vote. Also, the communities that are most incarcerated are not the communities giving money to political campaigns. They're certainly not the people that politicians are targeting for votes. So prison reform has never been an issue that would serve you well politically. Crime, on the other hand, is really easy to utilize, because it scares people, and fear is the best campaign tactic: "You have to vote for me because I will protect you from evil and scary people. I'm the one who'll be tough on crime, keep law and order."

Of course, a lot of that is very racialized. Throughout

the '80s and '90s, that fear tactic was used to build the War on Drugs. A myth of super-predators was created, but they were always framed as young black men. It was a very scary tactic: "There are these people who exist among us. We have to clean it up, get it off the streets!"

There are many people who profit off the prison system, and it was very convenient to claim drugs as the reason that they were doing what they were doing. So the rate of incarceration just exploded, because once you make these really tough laws, anyone can get caught in them, anyone who's a little bit vulnerable: people of color, poor people, people with disabilitiesincluding people with drug dependencies, who are more likely to be convicted of drug possession.

Right now, we're dealing with a system that incarcerates 2.4 million people, most of whom are incarcerated for things that weren't dangerous to anyone. Prison, however, makes violence fester. Caging people is a violent act, and often the people going to prison are traumatized-especially if you've done something violent, you've probably been a victim of violence vourself. That's what the research bears out. "Hurt people hurt people" is a pretty common phrase along these lines.

Prison isn't going to prevent future violence. So if you're thinking practically—as opposed to following one of these fear-based campaigns—you have to think creatively of the different things that can be done that won't entrench violence.

How has America, which supposedly cares about social justice, become the world's leader in incarcerating people?

It's a number of things, but a couple stand out. One is that racism isn't unique, anti-blackness isn't unique but American anti-blackness is. We had slavery, and prison has become an incarnation of that.

Michelle Alexander writes about this in The New Jim Crow. After slavery, prison became the substitute. The 13th Amendment states that people are not allowed to be enslaved, unless they've been convicted of a crime. In the South, blacks were then enslaved after being arrested for ridiculous crimes-loitering or whatever. Incarceration became used more and more as a form of racial and social control. The Drug War has played out along those lines; it's encompassed everyone. Black people, certainly, were specifically targeted. Other people of color, too-poor people.

You say that isolation is the true purpose of incarceration, not rehabilitation.

The parlance of the system is correctional: We "correct" people by isolating them. Prison cuts people off in a dramatic and harmful way. It cuts people off from the things that will help them move forward with their lives—relationships with other people.

Inmates are often far away, and it's practically impossible to contact someone in prison. The most reliable form of communication is letters, using the postal mail, which, at this point, is the way people communicated 100 years ago. I love sending letters, but I don't want that to be my primary form of communication with the people that I love most.

Phone calls are exorbitantly expensive for many. They're controlled by private companies that usually have a monopoly on the phone service and charge families really high rates. You can't call someone in prison; they have to call you. You have no idea when the phone call will come, and you can't call them back. Once you're on the



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phone, the call is monitored and your time is limited.

If you visit, you're in a situation where a guard is breathing down your neck. Usually, you're with a number of other people. It's not a normal interaction. It's not a way of existing in a world with other people.

You make the point that the experience for women in prison is more severe than it is for men.

One thing Kayla said about women in prison is that most of them had one moment that determined the rest of their lives. A lot of times, it was a moment that was an act of self-defense. Or they were in a group of people that was doing something violent, and they were pressured. Often, they were an accomplice to a boyfriend or a husband. These situations determine the rest of their lives. We talk so much in this country about our Christian ethos, the idea of redemption. But that's not what prison practices. It practices punishment, and this thing that you did then determines the rest of your life.

Over the course of the Drug War, women actually became the highest-increasing group of people in prison. They're mostly incarcerated for nonviolent crimes, largely drug crimes. And prison is an institution that's very conducive to sexual violence—particularly guards taking advantage of their place in the power structure.

The vast majority of women in prison have minor children on the outside. When they're incarcerated, they're often torn apart from what's most important in their lives-their children. And those children are separated from the thing that's most important to them-their mothers. Children are often uprooted from their homes, sent to live with a family member they may not know very well. Often, they're put into foster care; and sometimes that's permanent, as sometimes custody is terminated for incarcerated mothers. And it's very hard to earn back



"The modern prison is only about 200 years old. Someday, I think, prison will be obsolete."

your child, which is not something that anyone should have to do from behind bars. It's really a system that tears children from their mothers. That's something that we don't see often enough in the coverage of prison.

For the past 30 years, the public has disregarded the growing prison problem—out of sight, out of mind. But you see room for optimism.

Definitely. But the majority of people who are turning on this issue aren't doing so because they've suddenly been enlightened. It's just getting so big that it's difficult to ignore.

There's a huge crunch on state budgets. Prisons are really, really expensive. Look at the numbers: In some states, the cost of keeping someone in prison is \$60,000 a year. Think about the trade-offs in terms of education or health care.

What are some alternatives to incarceration?

Well, I think one alternative is—nothing! They just shouldn't be incarcerated. That person should not be entangled in the criminal system. We have to really re-examine the definition of crime.

How would you redefine crime?

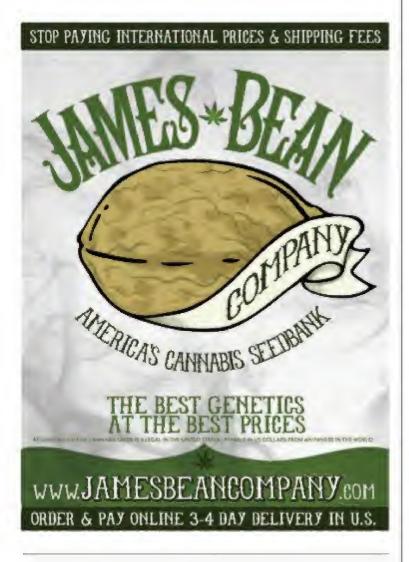
In terms of harm: Was someone actually hurt in this situation? Obviously, there are lots of situations where someone has been hurt, and they must be dealt with in a different way. But there are lots of approaches that people are beginning to explore. One that I discuss is restorative justice, which is bringing together the victims of a crime with their community and their family, often with the perpetrator of the crime, and sitting them in a circle.

What are the circumstances? The victim tells their story. They voice what happened to them, and the perpetrator listens, which is very difficult. Then the perpetrator talks about their side of things and what led to the event. They have to be prepared to show remorse, give an apology, and then think about how to move forward. What's the accountability? Here, the victim and the community are able to hold this person accountable











in a manner that can actually help the victim heal. It's something that the criminal system does not do. The victim is erased—it's the state versus the perpetrator.

How common is this?

Actually, a lot of communities are doing it. A lot of the most encouraging things these days are happening outside of the system. There's a very robust restorativejustice program in Evanston, Illinois. There's a restorativejustice program in the Austin neighborhood of Chicago where they're training barbers to be restorative-justice practitioners, so they can actually hold circles in the barbershops where people already go and feel comfortable sharing what's going on in their lives. That's an example where they've taken an existing situation that's a safe space and are using it as a violence-prevention mechanism.

Don't you think we'll always need prisons?

No, I don't. Prisons are a fairly recent invention. The modern prison is only about 200 years old. Someday, I think, prison will be obsolete. The important thing to think about as we reduce the size of the prison population is reforms that are not carceral. For example, I'm really against lockdown drugtreatment facilities-instead of prison, they throw you in a hospital where the door is locked. I think we need to think outside of the system, about what changes we can make in our communities to prevent violence. I think the more that we can be creative and build those kinds of structures, the more we'll be able to fundamentally move away from prison.

But what about very violent offenders?

Right now, we can't see that happening because we

don't live in a society that's conducive to actually preventing violence from happening in the first place. The structures that are in place right now nurture violence; they facilitate violence. Prison actually feeds violence and creates violence. But so does the military and our system of security-even the way we operate schools. It's built around violence in many ways. I think the more we can change existing structures that foster violence, the more we can move away from prisons themselves.

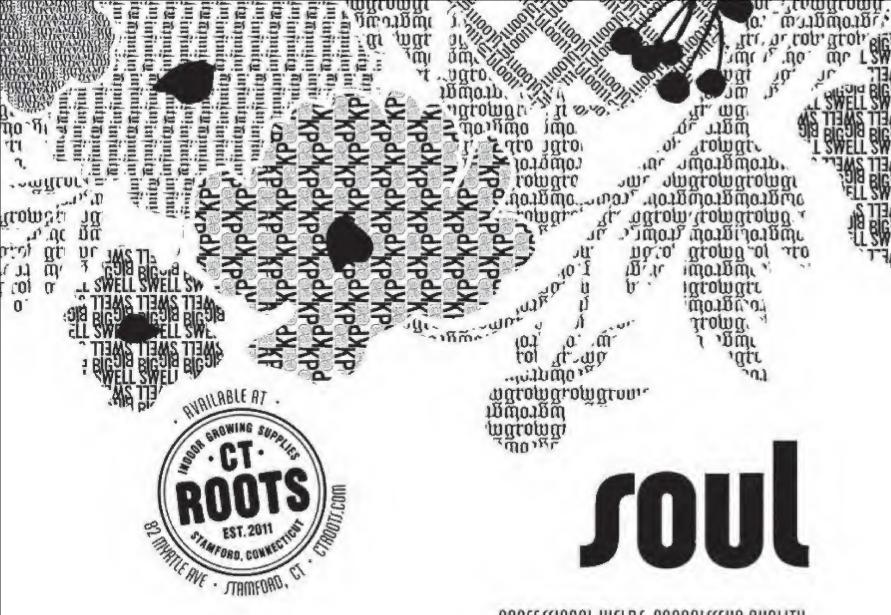
That seems optimistic.

I don't think so. There's a way of thinking about things. When you're inside the status quo, you may think: "This is the way it's gotta be." But 200 years ago, people said there's no way that we can get away from a system that endorses corporal and capital punishment.

Upon reading your book, what would you want people to bring away from it?

Two things. One is recognizing our common humanity. Many people, when they talk about prison—even when they talk about reform—view people in prison as this wholly separate population. They can't see them physically, so they don't recognize them as human.

The other thing, I guess, is to ignite that sense of imagination in terms of what's possible for the future: making people realize that prison is not the way to prevent harm and make things safer—in fact, in many ways it makes things less safe. It's been really interesting lately to see some of the new studies showing that states that reduce their prison populations the most are the same states that are able to reduce crime the most. Because prison, in many ways, is eriminogenie it creates crime. It creates violence. *



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Cannabusiness 117 July 2015 **High Times**

High Profiteers One Colorado couple seeks to rule the cannabis market.

Their ambitions land them a CNN series. By Mike DiPaola





young couple moves to a small town and opens a business. They experience similar growing pains as many new business owners: Their personal credit is shot, they have to borrow money from friends to stay afloat, and they deal with dubious job applicants and tight-ass locals. Interesting maybe, but not exactly the stuff you'd base a TV series on-unless the business is dealing weed.

Brian Rogers and Caitlin McGuire are driven to succeed in Colorado's infant legal cannabis trade, and they make no secret that they are motivated, highly, by the allure of big money. CNN was impressed enough with their story-or

perhaps their greed-to air it as an original series titled "High Profits." The eight-part program follows the couple's ganjapreneurial progress in Breckenridge, CO, a small and twee ski town west of Denver. Owners of the Breckenridge Cannabis Club, Rogers and McGuire are determined to establish their cannabusiness and eventually dominate the market. "I want to be the Steve Jobs of marijuana." declares Caitlin. "How great would that be?" (Maybe not so great, since Jobs relied heavily on the near slave labor of the Chinese work force, but that's another story.)

CNN is both following the exploits of these money-hungry entrepreneurs and documenting the birth and growth of a whole new segment in the U.S. economy.

"The industry is going to grow," says CNN's senior director of development Lizzie Kerner. "I think it is going to be like the new Silicon Valley. There are going to be billionaires."

One of the hurdles unique to the pot trade is that it is still largely cash only. As such, the cameras spend a fair amount of time on literal money shots: Rogers caressing armfuls cash in slow mo, McGuire kissing stacks of twenties, both of them losing count of the Benjamins. It's tawdry, but understandable: Their early returns show that their recreational pot business is about 30 times more lucrative than their medical sales. "This is what happens when you legalize marijuana," says Rogers.

Some of the obstacles they face are typical of the industry, such as their inability to get a bank to take their money. Others might be peculiar to small town conservatism. The locals do not want a rec weed merchant operating out of Main Street and would eventually move them a couple miles out of town, as if to shun them from the community. While they had the prime real estate they exploited it, if you can believe Yelp reviews and other critics, with some price-gouging. The nastier town folk say unkind things about the couple, calling them "parasites" and "pariahs," which are odd epithets to hurl at legitimate, if money-driven, entrepreneurs.

The first episode focuses on Rogers and McGuire getting started. In subsequent programs in the series they will meet with competition, as is inevitable in a brand-new and ever-growing market. "The competitors want to be on par with Brian and Caitlin," says Kerner. "And it gets a little vicious." **

Follow along with Brian and Caitlin's cannabusiness adventures and check local listings for recent episodes of CNN's "High Profits."

Their early returns show that their recreational pot business is 30 times more lucrative than their medical sales.









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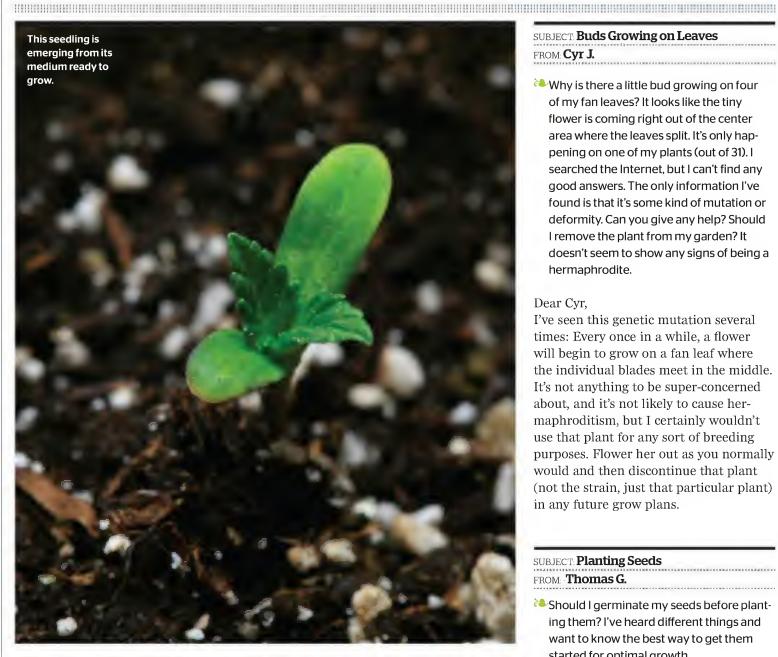
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Send your cannabis cultivation questions to @deardanko or deardanko@hightimes.com.

SUBJECT: Outdoor Dirt Inside FROM: L.H. Can you grow weed using dirt brought in from outside? Dear L.H., The short answer is no: Dirt from outside is almost always much too dense to grow plants in containers indoors. The roots simply don't have any room to breathe, and without oxygen, plant growth slows to a minimum, resulting in eventual death. There are also a bunch of problems that can arise, such as pests and diseases, when using outside dirt indoors. You're much better off purchasing a peat- or cocobased soilless mix from a garden store. These mixes are already fairly airy and can be supplemented with perlite and other products that help loosen them even more. The important thing is to allow oxygen to reach the roots for optimal growth, and bringing in soil from outside won't let enough

oxygen get there.

Danko Tip: Both clay and sandy soils can be improved by mixing in cured compost.



SUBJECT: Temps in Flux FROM: Lieutenant Dankowski

l'm two weeks into my first grow. I chose two Northern Lights feminized seeds from Royal Queen because I heard somewhere that they're a good choice for a beginner. I'm growing in a Pro-Mix/perlite mix using one 400-watt high-pressure sodium (HPS) light on an 18/6-hour cycle, plus oscillating fans and a carbon filter/fan pulling air out of the room.

My room gets down to around 60°F during the dark cycle (77°F during the light). I decided I wanted it around 70°F during the dark, so I purchased an oil radiator. The radiator's thermostat does not keep the temperature steady, however. When it turns on, the room will climb to the target temperature in about 15 minutes before the radiator shuts off. Then, over

the course of 30 minutes, the room will cool by six degrees before the thermostat restarts the cycle. This occurs eight times in a six-hour period. Can this six-degree fluctuation harm or stress my plants? What if I set the range between 70°F and 76°F—would that be any better?

Dear Lieutenant,

I don't think you'll experience any issues or problems due to this slight fluctuation in temperature. In fact, a variation of 10°F or so between daytime and nighttime temps is desirable and perfectly okay for your plants. It doesn't sound like your temperatures are outside the bounds for normal growth. You may see some purpling toward the end of your grow cycle, but I wouldn't worry too much about a six-degree fluctuation.

SUBJECT: Buds Growing on Leaves FROM: Cyr J.

Why is there a little bud growing on four of my fan leaves? It looks like the tiny flower is coming right out of the center area where the leaves split. It's only happening on one of my plants (out of 31). I searched the Internet, but I can't find any good answers. The only information I've found is that it's some kind of mutation or deformity. Can you give any help? Should I remove the plant from my garden? It doesn't seem to show any signs of being a hermaphrodite.

Dear Cyr,

I've seen this genetic mutation several times: Every once in a while, a flower will begin to grow on a fan leaf where the individual blades meet in the middle. It's not anything to be super-concerned about, and it's not likely to cause hermaphroditism, but I certainly wouldn't use that plant for any sort of breeding purposes. Flower her out as you normally would and then discontinue that plant (not the strain, just that particular plant) in any future grow plans.

SUBJECT: Planting Seeds

FROM: Thomas G.

Should I germinate my seeds before planting them? I've heard different things and want to know the best way to get them started for optimal growth.

Dear Thomas,

Some people use moist paper towels to germinate their seeds, but I recommend sowing them directly into the medium you plan to grow in. This reduces any stress the seedlings will suffer in the transplanting process and secures the young plants firmly in your chosen mix. The important thing is to not plant the seeds too deeply (a quarter-inch is perfect), and be sure to keep the medium moist and warm for the best germination success rate.

There's nothing inherently wrong with using the moist-paper-towel method, as long as you're gentle with the emerging taproot and don't let it grow too long before planting. My own preference, however, is simply to start the plant in the medium itself to reduce the







Danko Tip: Check the pH before assuming you have a nutrient deficiency, as pH fluctuations can cause nutrient lockup.

likelihood of damaging tender young roots and shoots. Also, don't keep the grow light too high above your seedlings, as this will cause them to stretch trying to reach the light and will leave your young plants looking long and lanky.

SUBJECT: Flushing Fish Farms

FROM: Johnny Goodkush

I'm a longtime reader and would first like to thank you for sharing your grow wisdom with the world. Anyway, I'm thinking about creating an outdoor aquaponics system and was wondering if I'd still need to flush my plants with clean water toward the end of their flowering stage, seeing that I'm not using any artificial nutrients.

Dear Johnny,

Thanks for the kind words! It's an honor to help people learn how to grow their own.

First off, a quick word of explanation: Aquaponics is the method of growing plants connected to a fish-farm tank in order to create a symbiotic relationship between the fish and the plants. The fish waste feeds the plants, while the plants' byproducts can also be used to feed the fish. It's a difficult way to grow, since it's very hard to dial in your system and there's a huge learning curve. (The aquaponic growers I know have all killed hundreds of fish and plants in order to learn how to grow this way properly.)

As to your question, all nutrients—synthetic or natural—should be flushed during the last two weeks or so before harvest. Organic nutrients such as fish poop are easier to flush out than more complex salts and minerals, but they nevertheless must be leached out in order to get the best-burning, best-tasting buds. Good luck!



SUBJECT: Vegging Outdoors

FROM: Japa

In South America where I live, we have a natural 12/12-hour photoperiod for much of the year, up to 14/10-hours in our summer. So what safe way would you recommend for someone who wants to grow bigger plants outdoors and cannot use indoor spaces to get a longer light cycle?

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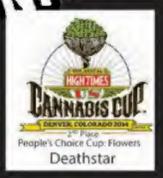


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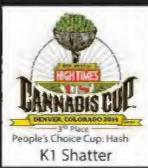
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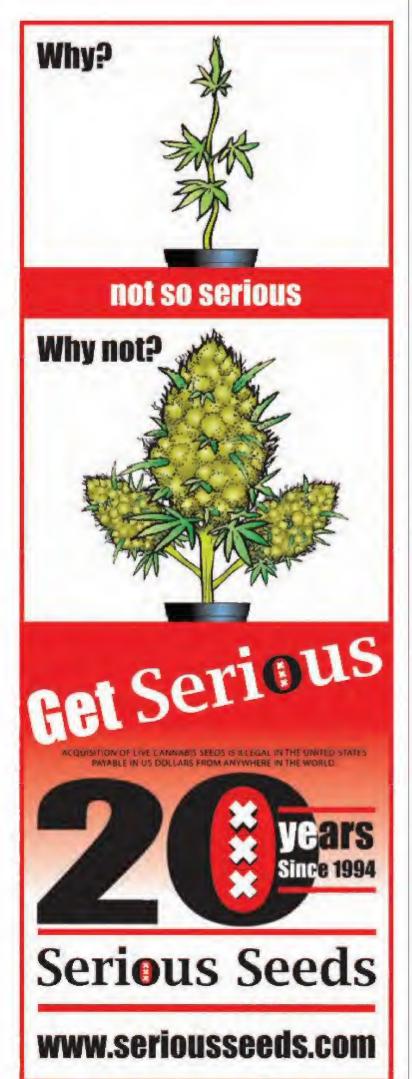
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Danko Tip: Remove male plants from your garden before they're able to open up their flowers and release pollen.

Dear Japa,

If you can't use an indoor space for this purpose, the only way I can think of to extend your vegetative time outdoors—thereby resulting in bigger plants—is to interrupt the dark cycle with light. Perhaps you can set up a light with a timer that switches on for a half-hour or so during the middle of the night. Your plants will stay in their vegetative stage and won't begin to flower until you remove the light and allow them to bloom as usual. Just keep an eye out for signs of stress that could lead to hermaphroditism or other odd behaviors and mutations. Also, don't do this if the light can be spotted by neighbors or anyone else.



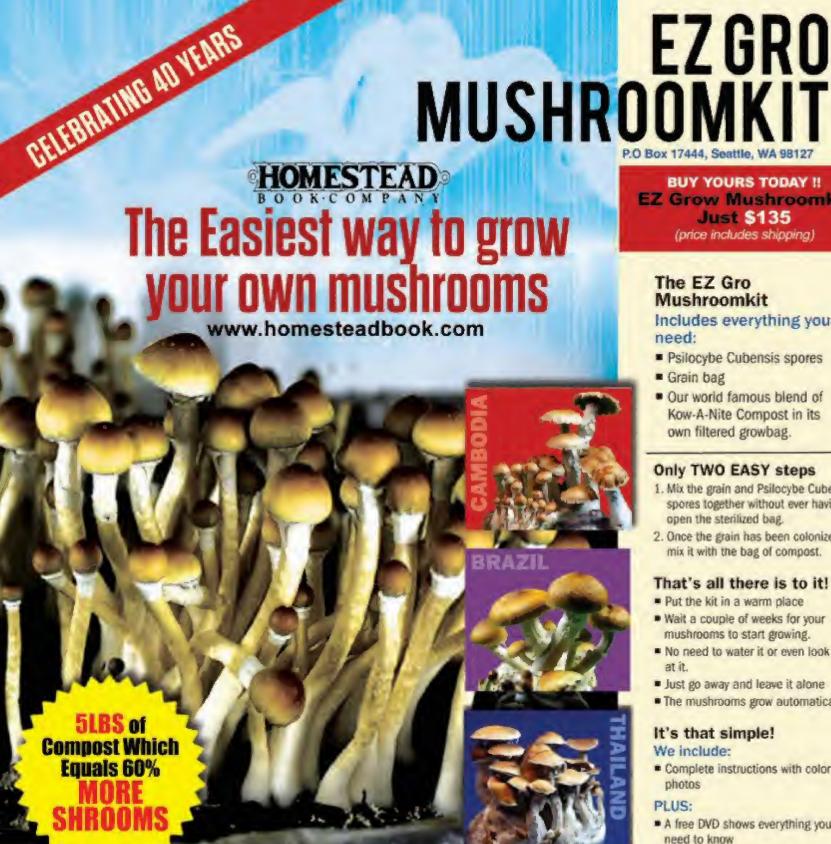
SUBJECT: Interfering Seeds

FROM: **Geert**

Sup, dude? My name's Geert, and I have an outdoor question. I've grown outside a few times, but I have a tree nearby that releases these tiny, butterfly-shaped seeds that seem to work their way into my buds. I don't have enough space for a greenhouse to keep everything nice and clean. Do you by chance know if washing the buds is a possibility, or should I stick to my tweezer approach while I trim? It's not like a plague, but every 10th bud or so I find a few seeds, and I know I miss quite a few when I find them after I go through the grinder. Any help would be much appreciated—and keep writing these awesome articles!

Dear Geert,

The best way to shield your plants is by setting up a greenhouse, but it seems you've already ruled that out. Just keep in mind that greenhouses come in many different sizes, and there are customizable versions for almost any space or budget. Perhaps there's another small structure you can build to protect your plants from these seeds; you could also consider growing them further away from the offending foliage. The most drastic step would be cutting down the tree in question, which might also free up more sunshine for your garden—but that's a hard decision, and one that only you can make. **



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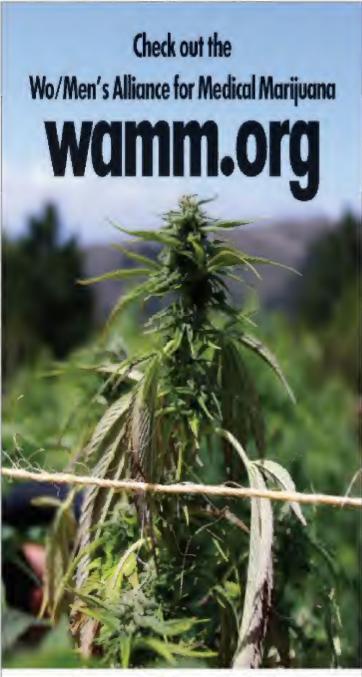
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I've smoked from aluminum foil for years, but now friends tell me to switch to steel screens. What's up?

Muni Mula

Those who

outscored

in the lab.

used cannabis

nonusers on a

creativity task

Hi Muni, Aluminum is a nasty neurotoxin that has

been linked to Alzheimer's (the more aluminum in the drinking water, the higher the rate of Alzheimer's occurring). Also, dozens of animal

experiments have linked aluminum to a range of cognitive problems. So I agree with your friends: Please switch to steel and use a vaporizer.

You keep saying there's no link between marijuana and creativity. How can this be?

Art Vader

(THC, a partial agonist, is gentler.) Also, synthetics have no quality control: Underground chemists play around with molecules whose effects we know nothing about. I'd say stick with the plant that has a 5,000-year safety record.

Will high-CBD strains help improve the appetite?

I.M. Full

Hi I.M., Not unless they have THC, too: Cannabi-

diol actually *decreases* appetite in rodents. Don't be surprised if it's marketed as a diet aid soon.

I understand why tolerance is a problem for lethal drugs like alcohol or cocaine, but why would marijuana tolerance be a sign of trouble?

Muse E.M.

Hi Art,

Actually, new data suggest that I may be wrong. For some people—particularly the less creative—those who used cannabis outscored nonusers on a creativity task in the lab. As you know, many artists insist that the plant helps them, but researchers are still studying the scientific details.

If marijuana is so safe, then why are fake weed products, which work on the same receptor, so dangerous?

Spice Girl

Hi Spice, Synthetics are full agonists, meaning they make the CB1 receptor fire with a vengeance. Hi Muse,

Good point! Alcohol tolerance means people drink more and end up giving their livers a beating. Regarding cannabis and its non-lethal THC, I'm not sure what to say. Other than increasing your monthly marijuana bill, tolerance might increase your exposure to respiratory irritants if you don't vaporize. Other than that, there's simply conjecture—not hard data—about pot's ill effects. **

Dr. Mitch Earleywine, PhD, is a professor of psychology at SUNY Albany and the author of Understanding Marijuana and The Parents' Guide to Marijuana.







The Rosin Technique

A cheap, easy and non-explosive way to make dabs at home. By Craig Coffey

🖥 his month, we're going to explore a technique for making solventless hash conveniently and safely. While there are many emerging techniques for creating dabs, it is generally ill-advised to try them at homewith the exception of this one. No solvents are used, and all of the materials vou need are easy to find and cheap to buy. (In fact, you probably have everything you need to get started laying around your home right now.)

Stoners have embraced the simple hashmaking method known as the rosin

technique, or "rosin tech," and it's caused a run on Bed Bath & Beyond's hair-straightener supply reminiscent of the Great Crème Brûlée Torch Shortage of 2014.

At first glance, this technique looks like classic stoner myth, but upon further investigation, this is definitely a legit hash-making method. Best of all, it's easy to learn and safe to do at home (provided you're comfortable handling a hair straightener). The method is solventless, the product is dabbable, and good results can be obtained with a wide range of starting materials.

The how-to portion is simple: All you need is a hair-straightening iron, some parchment paper and about 1 gram of buds, kief or bubble hash. First, fold a piece of the paper in half and put some weed in the middle. Set the



straightening iron to medium-low heat and squeeze the parchment paper with a lot of pressure for about five seconds, then open it and remove the flattened, heated starting material. There will be a ring of oily resin around it; this is what you're looking for. You can repeat this process two or three times on the same sample, and you should be able to pull a 7 to 10 percent return of a translucent (and dabbable) solventless oil.

And that's all there is to it: no solvents, no purging, no risk

of blowing up your home. You can use the same process to make dabs out of the kief in your rolling box or to refine low-quality bubble hash.

If you think this is a gimmick, think again: Several pioneers of the rosin technique have been able to produce sizable quantities of concentrate using a shirt press or some other large industrial heat press. And some of the best practitioners have even placed in High Times Cannabis Cups with rosin-tech dabs. Excellent examples of the technique can be seen by Googling "#rosintech." *

1) A hair iron, some parchment paper and weed are all you need. 2) Set the iron to medium low and put your weed in the parchment paper. 3) Squeeze very hard for a few seconds. 4) Collect the squeezed-out resin on vour dabber.









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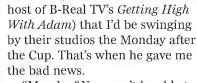
Keepin' it Real

Kickin' it with B-Real on his Dr. Greenthumb show

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f you've been to any of our last three Cannabis Cups in San Bernardino, you might've noticed the foxy babe spinning onstage during the award shows. That babe is Crystal Ellis-a world-class celebrity DJ and international Playboy Playmate who also happens to be our former Miss High Times 2007 runner-up. More recently, she's also become the host of her own show on B-Real TV called Tits N Tacos.

While she and I were working out her contract for this year's performance, Crystal invited me to be a guest on her show while I was in town. Excited, I told my pal Adam Ill (the



studios in downtown LA.

"Monday? You won't be able to do Crystal's show if you're coming on Monday," he said. "Her show airs on Tuesdays."

"Really? I didn't realize," I replied. "Damn, that sucks-I was excited about coming on."

"Well, then we should get you on the Dr. Greenthumb show instead. Let me talk to B today and get it official."

Wait—so instead of being on Crystal's show, I was going to be a guest of the man himself, B-Real? As Adam notoriously exclaims: Whaaaaaaaat?!?

Now I'll be honest—generally speaking, I'm not the biggest fan of hip-hop. But Cypress Hill is in a league all their own: I've always loved their mellow, smokedrenched grooves and had mad respect for B-Real. I first met him back in 1999, when Cypress played the High Times 25thanniversary party at Irving Plaza in New York. Over the years, our paths have crossed at numerous Cypress shows and pot events, including HT's Cup in Seattle last September, where I got to

interview B on camera for the first time. Now, the sneaker would be on the other foot.

I arrived at the studio in downtown LA just before 4 p.m. and was welcomed by Adam, B and their crew. Within minutes, we were settled in comfortably on the set and the cameras were rolling. Over a few fat hash joints, we discussed the history of High Times and the Cannabis Cup, as well as the legal, economic and

cultural strides that marijuana has made in recent years and its inevitable expansion in California-in which B intends to play an integral role. Just days earlier, he'd won a government lottery granting him one



of only 20 dispensary licenses in Santa Ana (paving the way for him to open his first Dr. Greenthumb shop), and the night before he'd won two awards at the Cup. Since he'd been too busy working his booth to claim the awards onstage, I now had the pleasure of presenting them to him live on the show.

"You guys took home two awards last night, one of which was second place for Best Booth," I said as I handed him the plaque. "And even more impressive than that one, we have this bronze medal for third-place Best Sativa."

"What was it?" asked Adam, referring to the winning strain.

"The Dr. Greenthumb Tangie," B-Real beamed.

After the show—and a few dabs and photos-B gave me his personal number and told me I was welcome back on the show anytime. After nearly 20 years of being little more than casual acquaintances, I could finally now say that B-Real and I had become homies.

Whaaaaaaaaat!?! 💥

Watch Bobby on the Dr. Greenthumb show at hightimes.com/ almostinfamous, and see Crystal, Adam and B in action at breal.tv.



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DC Triumph

Our nation's capital defies Congress, enacting the "soft legalization" of cannabis.

his past November, over 70 percent of voters in Washington, DC opted to remove all penalties for adults who possess up to two ounces of cannabis, and to allow a six-plant-perperson count for home cultivation (no more than 12 plants per household, six of which can be flowering). Unlike Colorado and Washington State, however, where adults can buy cannabis products in a manner similar to alcohol, there will be no licensed cultivation or sales permitted in DC—and, as with most cannabis-law reforms, the public use of cannabis is still forbidden.

As a result of the new law, there may be a spike in home cultivation, and hydroponic and paraphernalia stores will certainly profit. But absent genuine legalization, the vast majority of cannabis consumers in DC will continue to purchase their product from black-market sources. Thankfully, however, because of efforts led by the grassroots DC Cannabis Campaign, the possession, use and smallscale cultivation of cannabis is no longer a criminal offense in the nation's capital.

Despite that good news, resistance to the new law continues. One of the first measures approved by the newly elected Republican majority in Congress last fall was to attach a rider to an omnibus spending bill that effectively stops the DC City Council from expanding the new



law by creating tax-and-regulate policies for cannabis. At the time, anti-pot zealots in Congress argued that the rider both precludes future legalization efforts and renders null and void the passage of the "soft legalization" initiative approved by DC voters.

DC Mayor Muriel Bowser, the City Council and Eleanor Holmes Norton, the district's non-voting member of Congress, all strongly disagreed and, insisting that the will of the voters must be respected, pledged to implement the new law.

DC's legalization measure was scheduled to take effect at midnight on February 26. Republican members of Congress sent a hotly worded letter to the mayor, the City Council and the chief of police, threatening them with arrest if they implemented the measure. But despite the strong-arm tactics, Mayor Bowser allowed DC's law to take effect.

According to the Washington Post, Representative Jason Chaffetz (R-Utah), who chairs the House Oversight Committee, has told Bowser: "You can go to prison for this. We're not playing a little game here."

But Bowser is undeterred. "We are acting lawfully," she told reporters. "I have a lot of things to do; being in jail wouldn't be a good thing."

Not surprisingly, the day that cannabis became somewhat legal was remarkably festive in otherwise staid and stuffy Washington, DC. A number of local businesses celebrated the change in law, including a host of 4:20 giveaways of food and drink at popular eateries. Best of all, the Washington Post openly questioned whether it should continue to drug-test its employees.

Historically, the greatest interference in DC's domestic affairs happens when the GOP controls Congress. From a political viewpoint, it appears likely that DC can move forward with full legalization only when Republicans are no longer in the driver's seat.

FREEDOM FIGHTER

By Erik Altieri, NORML communications coordinator

Outreach Guru

Kevin Mahmalji's specialty is strengthening our voice.

Say hello to Kevin Mahmalii, the new national-outreach coordinator for NORML, who will also oversee the day-to-day operations of the Denver chapter. Kevin will use his expertise as a professional organizer and his knowledge of marijuana policy to assist NORML's state and local chapters with the development of an effective community-relations program. Its goal: to engage neighborhood leaders and elected officials on the issue of legalization.

Before joining Colorado's marijuana industry, Kevin devoted his considerable energy to a number of political campaigns. He was a field organizer in the 2008 presidential race, and later worked as a regional field director and deputy political director for two hotly contested campaigns in Virginia and Colorado.

Kevin would go on to become the director of government relations for one of the largest dispensary networks in Colorado,

tasked with assisting regulators from the state's Marijuana Enforcement Division to develop a regulatory framework under which Amendment 64, Colorado's historic legalization measure, could be implemented.

In everything from taxation to the production of concentrates and infused products, Kevin worked with lawmakers at every level to protect and accommodate the needs of cannabis consumers, while being mindful of public-safety concerns.

"We're making progress on the issue of legalization," Kevin notes, "but it's imperative that we have a solid framework in place so that we can grow with the need for increasing marijuana advocacy."



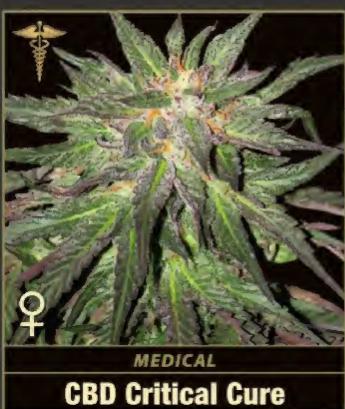
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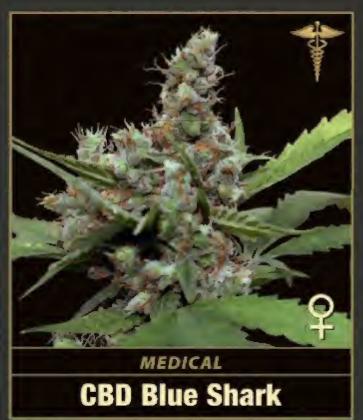


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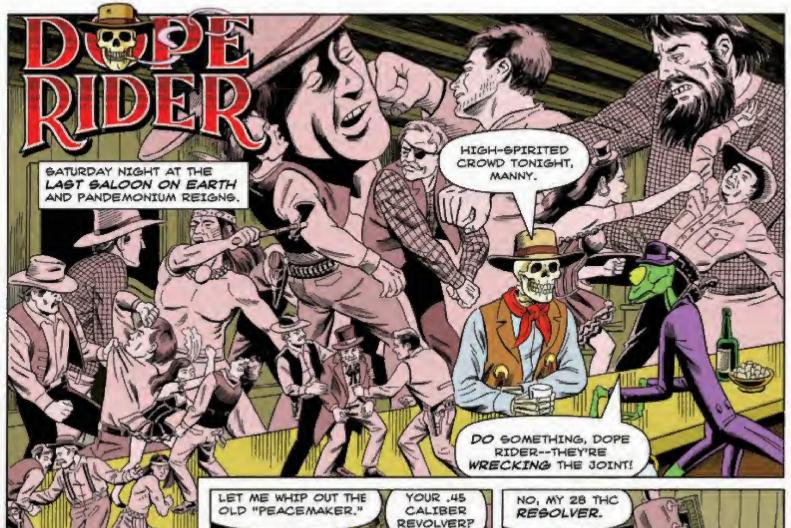
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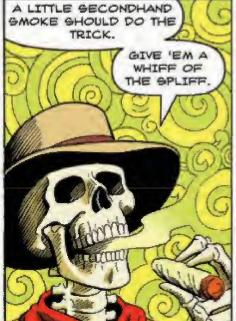
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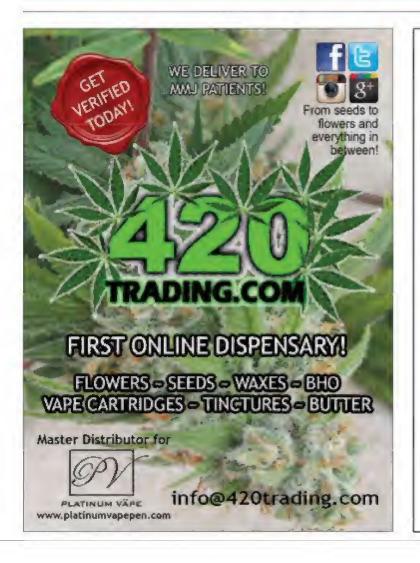














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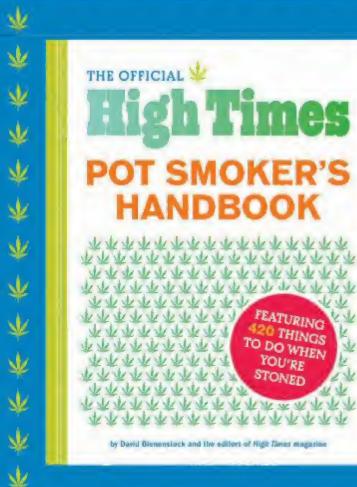
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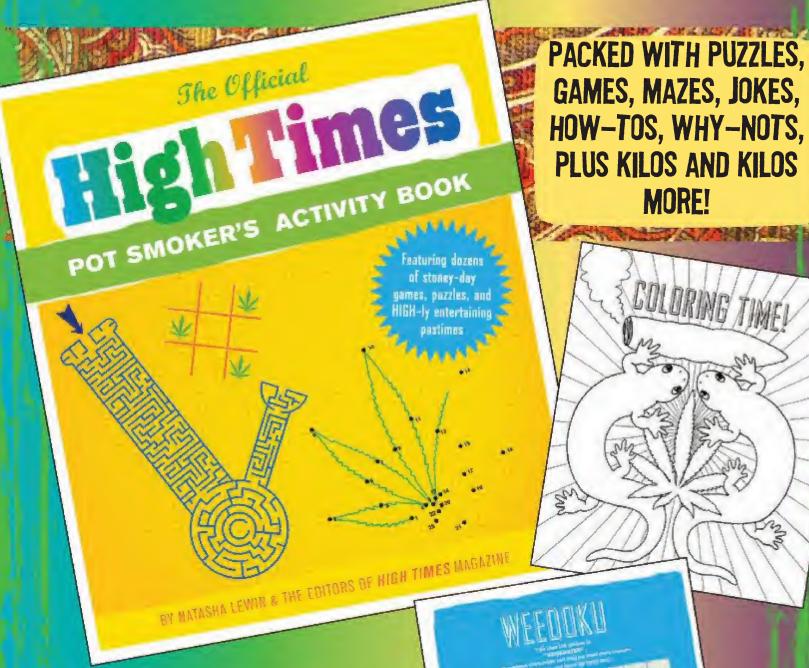
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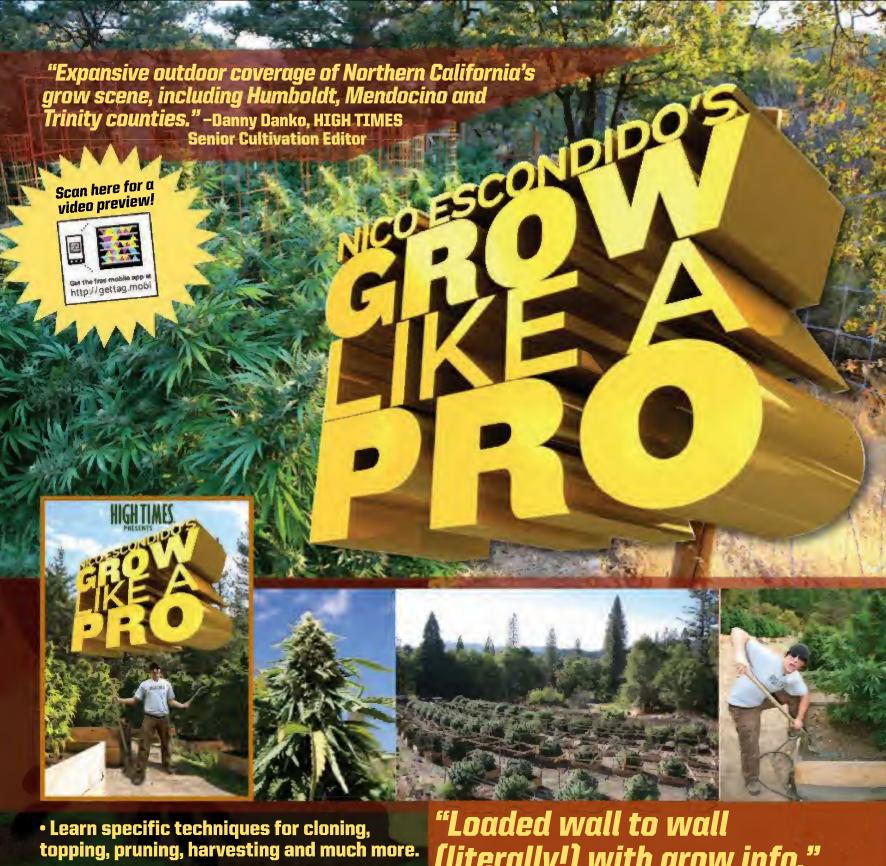
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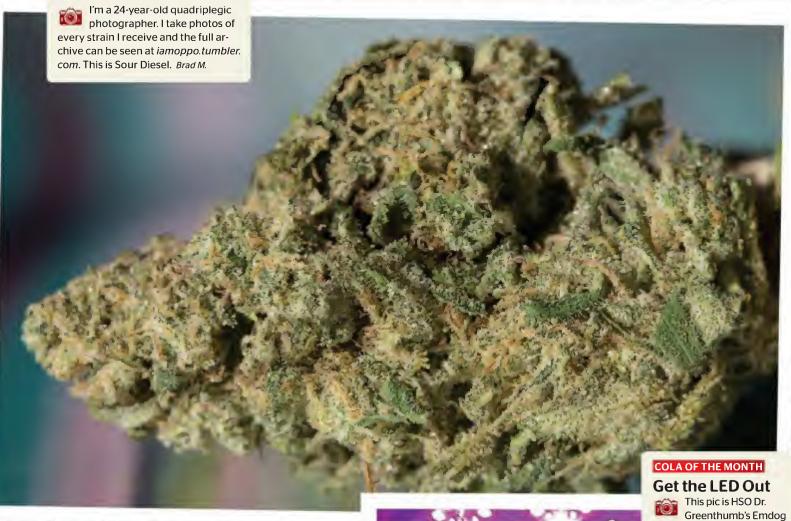
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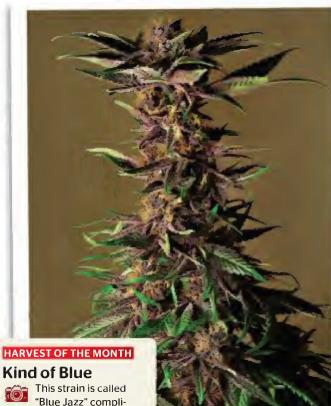
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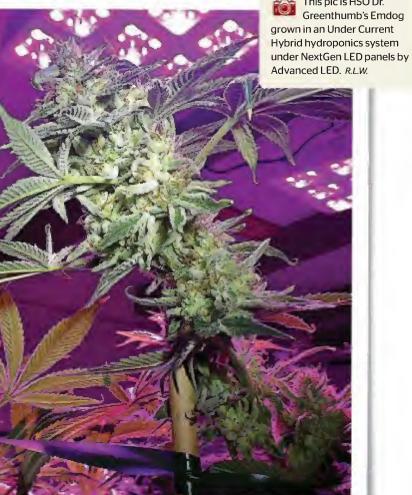
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July 2015 High Times









HIGH TIMES



Colorado's Cannabis Boom

Eighteen months after Colorado legalized recreational pot, the industry continues to grow. To get a taste of the latest developments, HT tours the Rocky Mountain State and checks out the pot-star growers and cannabusinesses that have been making their mark. Plus, a colorful recap of the US Cannabis Cup in Denver, which drew over 40,000 people!

Legalization: Past, Present & Future

Marijuana legalization has become a smoking-hot topic these days: You can't get through a single 24-hour news cycle without hearing about some state being pushed to consider cannabis-law reform, from decriminalization to outright legalization. "Radical" Russ Belville examines the history and vitality of this surging movement.

Growing Bigger in Oregon

Dru West, author of *The Secrets of the West Coast Masters*, takes you to the Beaver State to share tips for getting the most out of each and every pot plant you grow—including his own ingenious techniques for providing air circulation at the canopy level to produce monster greenhouse yields.

America's Hemp Revival

Medical and recreational cannabis have been getting all the press, but as outright legalization draws closer nationwide, it's clear that industrial hemp will be growing in the fields of American farmers again soon. Contributor Rick Thompson takes a look at hemp's welcome return.

Super Susan Sarandon

The Oscar-winning actress Susan Sarandon (*Dead Man Walk-ing*) has always been an outspoken and articulate advocate for humanitarian causes. Now she's using her celebrity "to shine a flashlight," as she puts it, on the injustices of pot prohibition.





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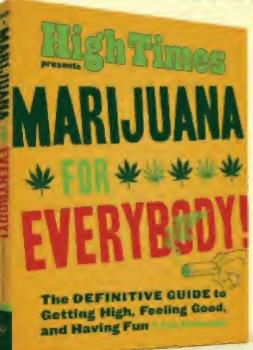
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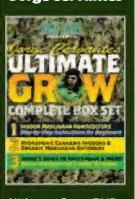




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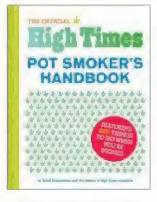
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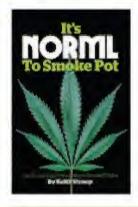
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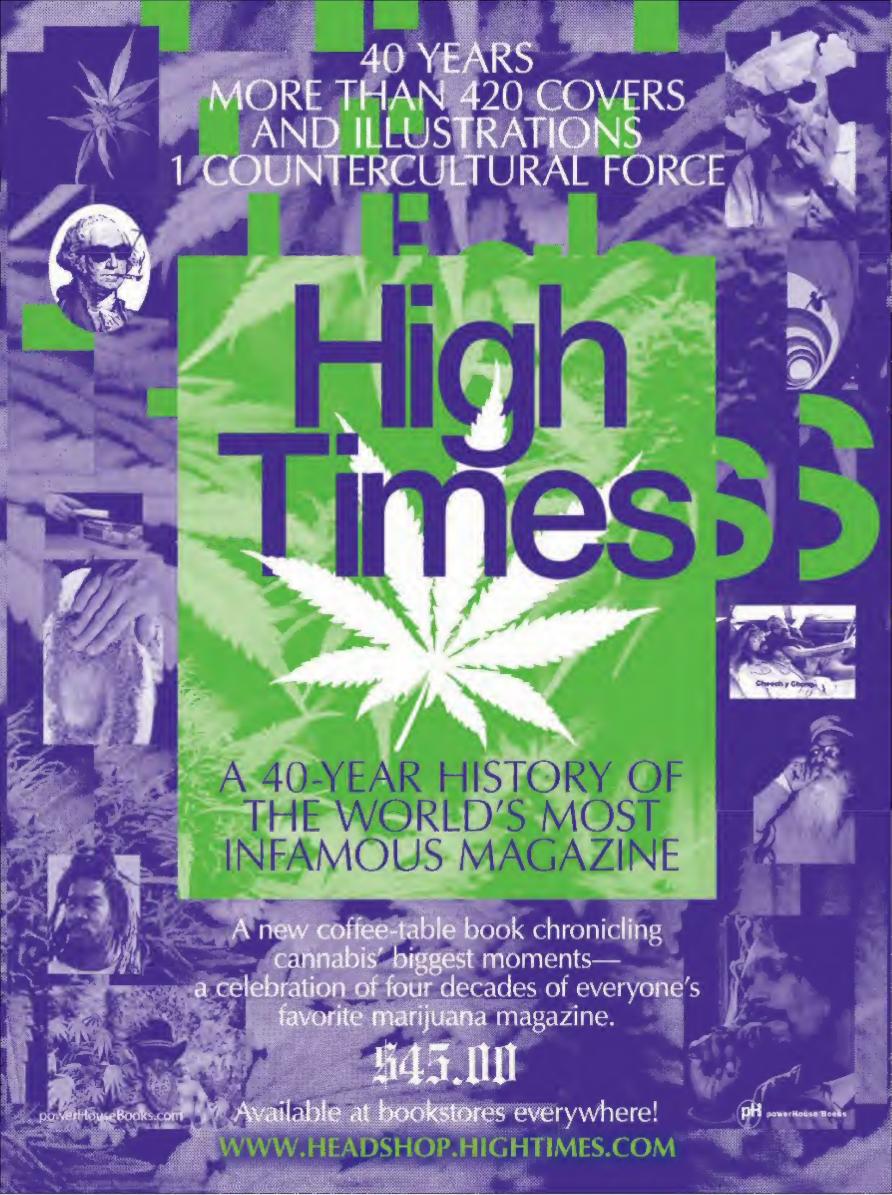
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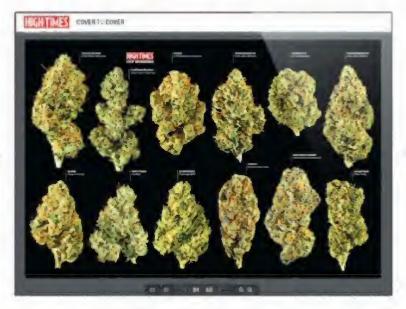
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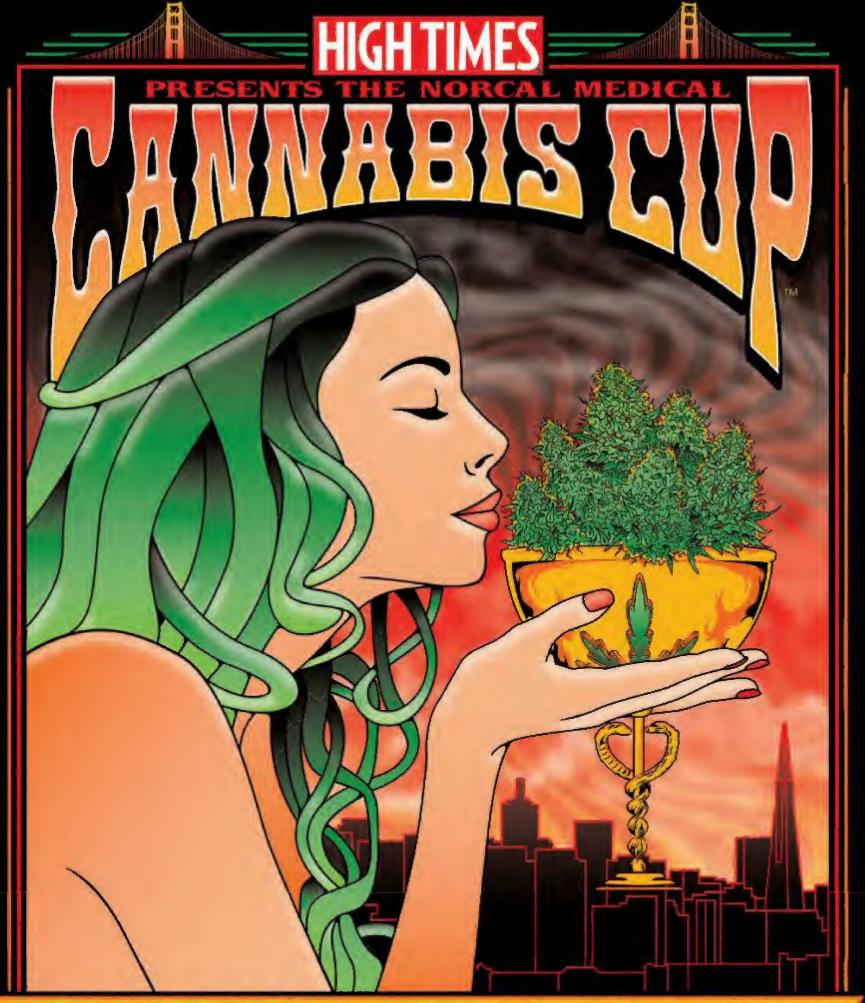
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Quantity

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Neville's Haze x Early MM \$ 225.

Taz - Thai x Haze 21 \$ 225



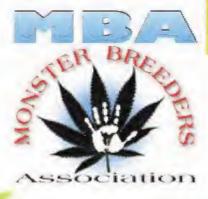
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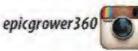
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